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1966

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# AGRICULTURE'S CHALLENGE

today and tomorrow

**Department of Agriculture**
**Washington, D. C.**

THE PRESIDENT
*The White House*
*Washington, D.C.*

Dear Mr. President:

It is my privilege to present to you this report entitled, "Agriculture's Challenge—Today and Tomorrow," on the services rendered by the U.S. Department of Agriculture to our farm and rural people and the whole Nation during the past year.

As the report shows, 1966 was a year of change and of challenge during which the Department of Agriculture played a leading role in helping American farmers move into a new and better era. In these pages you will find an account of how USDA is facing up to four major challenges: Building stronger family farms; revitalizing rural America; laying the groundwork for a world free from hunger; and providing a vast array of services to all American consumers.

On behalf of the devoted public servants who make the USDA "the people's department," I take pleasure in presenting my annual report as Secretary of Agriculture for the year 1966.

Orville L. Freeman

ORVILLE L. FREEMAN
*Secretary of Agriculture*

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## YEAR OF CHANGE—YEAR OF CHALLENGE

The year 1966 marked the end of an old era in agriculture and the beginning of a new and better one. It was a Year of Change and Challenge.

The changes were far-reaching, deep-seated, even dramatic.

*The Change in Surpluses: Disappearing.* For the first time in more than a decade agriculture is now generally free of surpluses. The carryovers of wheat and feed grains, a crushing burden for years, are down to the level of prudent reserves. The over-supplies of rice, milk, butter, and cheese, chronic during much of the preceding decade, are no more. A new cotton program combined with increased domestic and foreign use will help cut down the record high cotton surplus at least 5 million bales by the summer of 1967.

*The Change in Government Investment: Sharply Down.* The Commodity Credit Corporation investment in farm commodities fell to $4.4 billion, the lowest since 1953. CCC investment is now $4 billion below the peaks reached in 1956 and 1959.

*The Change in Income: Sharply Up.* Realized farm net income in 1966 climbed to $16.3 billion—over $2 billion more than in 1965 and about $4½ billion more than in 1960. For the first time in half a century, parity of income for efficient commercial farmers is clearly in sight.

*The Change in Farm Programs: Flexible.* There is no longer any question but that farm production can be guided and brought into balance by means of farmer self-determination with government assistance. Under the flexible provisions of the Food and Agriculture Act of 1965 farmers are expected to bring back into 1967 production about 18 million acres, mostly wheat and feed grains, out of the 63 million acres diverted in 1966.

*The Change in Rural America: Rebirth.* The revitalization of rural America continues, with more farm and nonfarm rural people enjoying pure water, better community facilities, improved schools, medical services, and an increasing number and variety of off-farm jobs. Technical guidance and government cost-sharing, credit and grants are having increasing impact. USDA advanced $1.2 billion in loans in 1966 to more than 700,000 rural families, helping them to build new homes and more productive farming enterprises, and to develop water and sewer systems. Another $455 million in electric and telephone loans in 1966 brought, or will bring, electric service and new or improved telephone service to some 284,000 rural users.

*The Changes in Food Aid: Better Diets.* USDA food assistance programs now help improve diets and nutrition for 45 million Americans—school children, low-income families, and others who have inadequate diets. The Food Stamp and the Commodity Distribution Programs for needy families were available at the end of calendar 1966 in over 2,100 counties and cities in all States and the District of Columbia. More than 18 million children were served low-cost, nutritious school lunches. Millions of other children in schools, charitable institutions, and non-profit summer camps benefited from USDA food donations and received milk through the Special Milk Program.

*The Changes in Export and Food Aid Abroad: Up.* Exports of farm products reached all-time highs of $6.7 billion for fiscal 1966 and $6.9 billion for the calendar year, registering gains of 10 percent and 11 percent, respectively, over the corresponding year-earlier periods. And the American farmer is viewed with well-nigh universal favor as the key figure in a war on world hunger. USDA research made advances toward solving the world shortage of high-quality, low-cost protein. These advances included a new process for making protein-rich soybean flour, the production of high protein flour from flour mill byproducts, and a new method of fermenting tempeh, a staple Indonesian food, with cereals and soybeans.

*The Change in Resource Conservation: Growing.* Conservation treatment for soil, water, timber, and wildlife was applied on over a million farms with government cost-share assistance in 1966. We continued to give technical assistance to nearly 3,000 local soil and water conservation districts that include about 99 percent of the nation's farms. We approved construction assistance to 89 watershed projects covering 6 million acres. The National Forests had a record timber harvest for the fourth consecutive year. National Forest campgrounds and picnic areas can now accommodate over 475,000 persons simultaneously. More than 200 Forest ski areas can handle another 300,000.

*The Change in Consumer Services: Expanding.* USDA inspected for wholesomeness and safety close to 90 percent of all the meat and poultry sold in the United States, a new record. We graded 60 percent of the meat (excluding pork) and 63 percent of the poultry sold, thus helping consumers select the qualities they needed for specific cooking purposes. Quarantine inspectors on duty at all ports of entry prevented the importation of crop and animal pests. We made further progress in wiping out animal diseases, some of which are transmissible to humans. By chemical, biological, and other means we protected our fruits and vegetables against pest damage. We regulated the interstate sale of pesticides in cooperation with the Food and Drug Administration and educated the American people in their safe use. We developed new foods and crop varieties for better living.

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Probably never before has the change in the position and responsibilities of American agriculture from one year to the next been so great as in the year 1966.

But the corollary of change is challenge. With new power comes new responsibility. A great and growing agriculture must meet a great and growing array of challenges—in the countryside, in the national economy, and in the world.

Our challenges divide into four categories:

We must build the American family farm into an even more productive, effective, and prosperous unit of the economy.
We must help to revitalize and reinvigorate the whole of rural America.
We must lead the crusade for a world free from hunger.
We must expand our areas of vital services to assure that the abundance produced by American farms, the resources available in farm and rural America, and the knowledge developed by agricultural science are used to support an era of better living for all our people.

To help achieve these great and noble goals requires programs and services that fulfill multiple purposes. We have them. Our conservation activities, for example, strengthen the family farm, create new opportunities in rural America, assure lasting productivity for future food and fiber exports, and open new vistas for better living for all consumers. Our recreation programs offer a new crop for farmers, an additional source of income and jobs for rural communities, and satisfaction for one of the fastest-growing demands of an outdoor-minded society. Our price and income stabilization programs serve farmers directly; but they also provide a more solid keystone for the rural economy and assured abundance for the nation.

This report portrays some of the ways in which these and our other USDA programs were used in 1966 to help American agriculture meet today's challenges while preparing a solid basis for meeting those of tomorrow. For just as the grain that is harvested in the summer and fall is the product of the seed that was planted in the winter and spring, so what man does today determines what he *can* do tomorrow.

# THE FIRST CHALLENGE: TO BUILD STRONGER FAMILY FARMS

"The farm people of this nation have made and are continuing to make a lasting contribution to our national prosperity. As a matter of simple justice they should share equitably in this prosperity."

President Lyndon B. Johnson
Message to the Congress, Feb. 4, 1965

The present-day American family farm is a twentieth century phenomenon. It enables progressively fewer farmers to produce ever-larger quantities of food and fiber on the same or fewer cropland acres. Our basic objective has been to increase the economic strength, security, and prosperity of this American phenomenon and the more than 3 million families who own, manage, and operate it.

We set out in 1961 to do three things: Raise farm income, reduce surpluses, and establish a "food budget" which would gear production to domestic, export, and overseas aid requirements.

## FARM INCOME CLIMBS

In terms of income, 1966 was a banner year for American farmers. Realized net farm income, at $16.3 billion, was 15 percent higher than in 1965 and 40 percent more than in 1960.

Gross farm income reached a new high of $49.5 billion. A rise of $3.7 billion in cash receipts from farm marketings was the big factor in the increase; but a $820 million rise in government payments also helped.

Livestock and livestock products accounted for three-fourths of the increase in cash marketings. Receipts from meat animals and poultry and eggs each rose 14 percent and returns from dairy products about 10 percent.

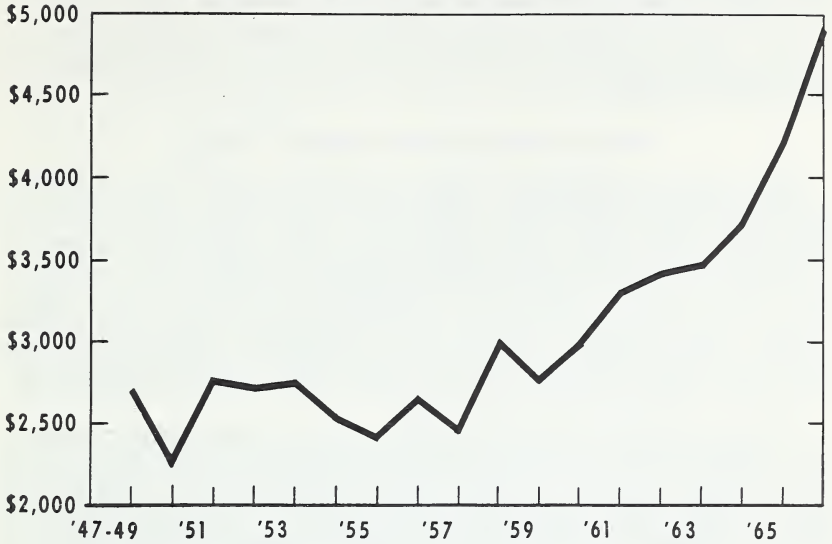
Cash receipts from crop marketings were about 5 percent higher than in 1965.

On the other hand, farm production expenses at $33.2 billion were also record high and nearly 8 percent above a year earlier.

With aggregate realized net farm income at $16.3 billion and the number of farms down slightly from 1965, realized net income averaged a record high $5,024 per farm. This was roughly 20 percent more than in 1965, and 70 percent, or over $2,000, more than in 1960.

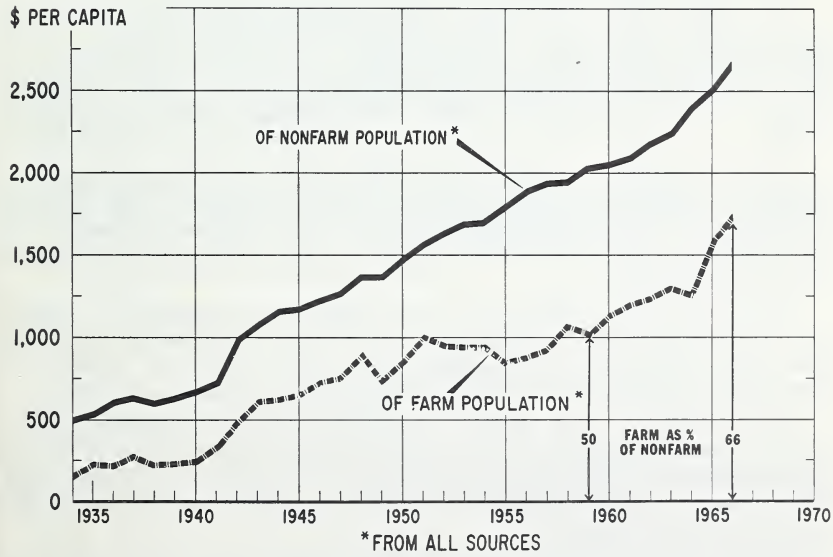
What may be even more significant than the rise in income is the accelerated graduation into "adequate size" class by family farms in recent years. One measure of "adequate size" is gross sales of $10,000 a year or more. Since 1959, nearly 200,000 farm families have moved into that class. Farms at this level of sales are approaching parity of income.

## OPERATORS' REALIZED NET INCOME PER FARM AVERAGE 1949 AND ANNUAL 1950-66




U. S. DEPARTMENT OF AGRICULTURE

## DISPOSABLE PERSONAL INCOME



Many farms, however, are still below the $10,000 sales level. For farm people in general, despite steady progress in the past six years, income still lags far behind that of other Americans.

On a per capita basis the income of farm people—from all sources—was $1,731 in 1966. This compares with $2,618 for other Americans.

## FARM PRODUCTION REMAINS HIGH

U.S. farm production in 1966 was the all-time second highest, exceeded only slightly by output in 1965. Crop production fell between 3 and 4 percent below the 1965 record, but output of livestock and livestock products continued at about the 1965 level. The 59 major crops were planted or grown on 298 million acres, the fewest on record. A number of crops had record yields, among them soybeans, rice, sorghum, and peanuts. On the other hand, yields of corn, wheat, oats, barley, potatoes, tobacco, and cotton were below 1965.

In the past 10 years, farm production per man-hour has nearly doubled. Today, a third fewer people on farms, harvesting fewer acres, produce around one-sixth more than a decade ago. The average farm worker now supplies food and fiber for roughly 40 persons, about 18 more than he could a decade ago. In comparison, a farm worker in Russia feeds only 7, and a farm worker in France only 14.

## THE END OF THE SURPLUSES

### Feed Grains Supply Stabilized

The Feed Grain Program, begun in 1961, provided a voluntary acreage-diversion and price support operation under which farmers have diverted up to 35 million acres from feed grains to soil conserving uses each year. This program plus increased domestic use and exports have cut the feed grain carryover in half.

In 1961 we had on hand 84.7 million tons of feed grain, equivalent in volume to more than 3.1 billion bushels. This surplus choked our national storage capacity, cost millions of dollars to handle and store, and represented an acquisition cost totaling billions of dollars.

Our feed grain carryover at the start of the 1966–67 marketing year was down to 42 million tons. This is almost exactly the level recommended by the National Grain Advisory Committee and other groups as an adequate and prudent reserve supply.

By the end of the 1966–67 marketing year, however, carryover of feed grains may drop to around 25 million tons. We have adjusted the 1967 feed grain program, therefore, to bring back into production the acreage needed to provide for domestic and export requirements.

Higher price support loan levels—up 5 cents per bushel to $1.05 national average for corn, and up 9 cents to $1.61 per

hundredweight for sorghum—along with higher projected yields and accompanying government payments, should help sustain national farm income at the higher levels achieved after 1961.

In addition to supply-demand balance, this program will tend to stabilize prices of livestock and livestock products to producers and consumers, and aid the development of our feed-grain export potential.

### Turnabout in Wheat

Our wheat situation as of July 1, 1966, as a result of acreage diversion programs and export demands, was also one of balance. The burdensome and costly surplus of 1.4 billion bushels of wheat which had piled up by 1961 was gone. The long-sought goal of a prudent and adequate national carryover of around 550 million bushels was achieved. The actual carryover was 535 million bushels. A further decline to perhaps 400 million bushels may occur in 1967.

> To maintain prudent reserves while meeting continued high exports and food aid needs, especially for India, we announced a cumulative total increase of 32 percent in the national acreage allotment for 1967–crop wheat. The 1967 allotment is 68.2 million acres. With normal weather, we could expect the 1967 crop to meet domestic and export requirements and help move stocks in 1967–68 toward a reasonable reserve level.

Wheat prices have been at levels substantially higher than the government loan rates. Combined with marketing certificate payments, cash receipts from wheat in 1966–67 are likely to approach the record level of $2.7 billion established in 1947–48.

### The Soaring Market for Soybeans

Soybeans provide one of the brightest elements in the agricultural picture. Soybean production jumped from 550 million bushels in 1960 to 931 million bushels in 1966, but this did not lead to excessive supplies.

> Recognizing the need for continued expansion of soybean production for domestic as well as export needs, we raised the price support loan level for the 1966 crop 25 cents per bushel to $2.50 . We are following a consistent policy of setting the support price at a level which assures farmers a share in improved prices.

### Cotton Program Dips Into Surpluses

Cotton growers took a big stride toward working their way out of the record cotton surplus which had climbed to 16.6 million bales as of August 1, 1966.

The new cotton program authorized by the Food and Agriculture Act of 1965 made it possible for farmers to reduce production without assuming the entire financial burden of the cutback. Cooperating growers receive a price support payment and a diversion payment where cotton land is diverted to soil conserving uses. A lower loan rate enables U.S. cotton to compete on a price

basis with synthetic fibers and with foreign grown cotton in both domestic and world markets.

Total cotton production in 1966 was only 9.6 million bales. The previous crop was 14.8 million bales. The reduction was larger than we contemplated or desired, due to unfavorable weather and increased insect infestation. The net result of the small 1966 crop along with increased demand, especially for export, will be a drop in the carryover on August 1, 1967, of about 5 million bales.

### Dairy Products

More attractive farm and off-farm job and income opportunities and relatively high prices for beef cattle led to sharp declines in dairy herds, milk cows, and milk output in 1965 and 1966. At the same time, high consumer income increased demand for dairy products.

With supplies of milk less plentiful, the flow of dairy products acquired by CCC under the support program decreased. CCC net removals of butter and American cheese from the market were reduced in 1966 to 0.6 billion pounds milk equivalent, compared with 5.7 billion pounds in 1965. Removal of nonfat dry milk fell to about one-third of the 1.1 billion pounds acquired in 1965. CCC had only small uncommitted stocks of dairy products throughout 1966.

To assure adequate production, we raised the support level of manufacturing milk from $3.25 to $3.50 a hundred pounds on April 1, 1966, and then to $4.00 a hundred pounds on June 30, 1966. The support level for butterfat in farm-separated cream was raised from 59.4 cents to 68 cents a pound. To help dairy farmers make long-range plans for their herds, we announced on October 14, 1966, that the $4.00-a-hundredweight and 68-cents-per-pound levels of price support would be continued through the marketing year ending March 31, 1968.

These and other actions increased the prices farmers received for milk sold under Federal orders.

Cash receipts from farm sales of milk and cream rose by 10 percent in 1966 to a record $5.6 billion.

With rising farm prices and income from milk production, the drop-off in output seems to be ending. Domestic production and consumption of milk and its products are now in better balance than they have been in many years.

### Rice Production and Income Up

With 1966–crop yields up more than one-fourth and production more than one-half greater than in 1961, rice producers had a banner year. Gross returns established a new record of more than $407.6 million, 46 percent greater than the $278.6 million farm value of rice in 1961.

The following table tells a dramatic story of progress under the rice price support loan and purchase program:

| | *Farm Value of Crop In Million Dollars* | *Yield, Lbs. Per Acre* | *Production in Million Cwt* |
|---|---|---|---|
| 1961 | $278.6 | 3,411 | 54.2 |
| 1962 | 322.6 | 3,726 | 66.0 |
| 1963 | 352.1 | 3,968 | 70.3 |
| 1964 | 358.5 | 4,098 | 73.2 |
| 1965 | 376.2 | 4,255 | 76.3 |
| 1966 | 407.6 | 4,324 | 85.1 |

To meet increased export needs for rice, we again raised acreage allotments. Back in 1961 we raised the national allotment 10 percent for the 1962 crop to 1,818,000 acres, compared with 1,653,000 acres for 1961. We added another 10 percent to the national allotment for the 1966 crop, raising it to 2,001,000 acres.

The U.S. exported about 1.5 million metric tons of rice in the 1965 calendar year. We are the world's second largest exporter, exceeded only by Thailand, which exported 1.9 million tons. Much of our rice goes to South Vietnam and Japan.

### Tobacco Program Raises Prices and Quality

Substantial progress has been made in reducing the record supply of tobacco of 2 years ago and bringing about a better balance with domestic and export requirements. Carryover stocks of flue-cured and burley—the big volume cigarette tobaccos—declined during 1965–66 and will drop further in 1966–67. During the year ended December 31, 1966, government loan holdings declined 202 million pounds (farm-sales weight).

Growers of flue-cured tobacco—the largest tobacco crop—have now completed two years of experience with the acreage-poundage program, which encourages each flue-cured tobacco grower to devote his efforts to producing tobacco of the best flavor and aroma. This represents an improvement in practices over earlier years. Under the old program it was advantageous to the grower to produce the largest possible number of pounds per acre with insufficient emphasis on quality. This practice threatened loss of export markets.

The 1966 flue-cured crop, which was the second produced under the acreage-poundage program, generally was of exceptionally high quality.

Better tobacco and reduced supplies of flue-cured tobacco had a strong upward influence on prices, raising average prices of the 1966 and 1965 crops about 7 cents a pound over 1964. Cash receipts in 1966 rose some 7 percent above 1965.

During the second half of 1966, an export payment program was initiated to regain and expand foreign markets for U.S. tobacco. Foreign markets usually take about a fourth of U.S. tobacco and are vital to growers. For the kinds of tobacco under marketing quota and price support programs in 1966, the pro-

gram provides for export payments of 5 cents per pound on exports from the more recent crops of tobaccos, and 10 cents per pound for exports from certain older crop tobaccos. This, together with other factors, will raise 1966–67 tobacco exports well above 1965–66.

### Wool

A 1965 amendment to the National Wool Act ties the incentive level to changing costs of production. In 1966, profits to wool growers increased as the incentive price level for wool moved up from 62 cents to 65 cents a pound. Encouragement of U.S. wool production has been a goal of the program since its inception in 1954. The recent change should aid in arresting or possibly reversing the recent downtrend in sheep numbers and wool production.

### CCC Investment Below $5 Billion

The disappearance of the surpluses is evident in a major reduction in the investment of the Commodity Credit Corporation. For the first time in 13 years, CCC's investment in price support loans and inventory dropped below $5 billion. At the end of December 1966, CCC investment totaled $4.4 billion, about $2.3 billion less than a year earlier and $4 billion below the peak reached in 1959.

Another dramatic evidence is the change in grain storage capacity. In 1957, CCC owned 238,439 grain storage structures, located in 24 States, with a total capacity of nearly 1 billion bushels of grain. As of November 1, 1966, CCC had reduced its storage capacity to about 154,000 structures in 15 States, with a capacity of 636 million bushels. Nearly all of this reduction was achieved between July 1, 1963, and November 1, 1966. The bins were sold by public auction.

## A NATIONAL FOOD BUDGET

A national food budget requires two essentials. First, there must be a careful advance determination of what demand will be in a given year and, if possible, even further ahead. We must estimate the demand for commercial use at home and abroad, and how much additional should be produced to aid needy people at home and overseas. This we are now able to do fairly well.

Second, there must be an effective mechanism which will enable farmers to move acres in and out of production as needed—with the expectation that the market will return fair parity income to the family farm of adequate size.

Flexibility and selectivity of production are of paramount importance. The needs of food deficit nations, vast as they are, cannot adequately be met by a wholesale return of diverted acres to production. These needs are selective.

Our agriculture has the capacity to overproduce food and fiber to such an extent that surpluses could quickly pile up again. To meet present domestic and world needs without surpluses, the

American farmer must be able to produce the right mix of foodstuffs. Now, for the first time, the Food and Agriculture Act of 1965 offers the tools to help him do so for several major crops.

> When we increased the national rice allotment 10 percent early in 1966, the process of adjusting U.S. farm production to provide the right mix of needed foods was launched. Using the flexibility provided by the Food and Agriculture Act of 1965, we are spurring production of such needed commodities as soybeans, wheat, and feed grains, while cutting back production of cotton.

Admittedly, the art of balancing production with demand is not yet perfected. Weather variations, for example, can make an enormous difference in production. With 70 million acres growing feed grains, a 10-bushel-per-acre variation means 700,000,000 bushels difference in available feed grains. But we are in a better position to achieve that balance than at any time since the end of the Korean War.

Besides carrying out the activities provided by the 1965 Act, we administer a number of other programs and services which help make a National Food Budget feasible and promote more orderly marketing as well.

### Marketing Agreements and Orders

Federal marketing orders, for example, stabilize fluid milk marketing for producers, dealers, and consumers. These orders, initiated by dairy farmers and made effective only with their approval, are administered by the Department to safeguard the public interest. They are flexible enough to meet changing marketing conditions which could jeopardize milk supplies.

> Two-thirds of all the milk used for fluid purposes—more than 6 billion gallons, valued at $2.7 billion at minimum order prices—was marketed under Federal milk marketing orders in calendar year 1966. Some 146,000 dairy farmers supplied milk to 73 Federally regulated markets serving more than 114 million consumers.

Forty-eight other Federal marketing agreement and order programs covered fruits, vegetables, and nut crops valued at $1.5 billion in calendar year 1966. These orders were in use in 33 States.

New programs which became effective during the year included one to regulate the quality of Northwest Bartlett pears and another to tailor annually to market requirements the quantity of hops marketed by growers in four western States. Growers of California nectarines and Texas citrus became the first commodity groups to amend their Federal order programs to include paid advertising and sales promotion activities, as authorized by recent legislation.

USDA helped upland cotton producers establish the Cotton Research and Promotion Order, authorized by the Cotton Research and Promotion Act approved by Congress July 13, 1966. The self-help program, developed to strengthen cotton's competitive position and expand its uses at home and abroad, is ad-

ministered by a 20-man Cotton Board representing each cotton-producing State.

### Marketing Guides

Marketing guides for several crops not covered by the Food and Agriculture Act of 1965 are developed by our economists to suggest to farmers how much they need to produce to meet the coming year's demand, at reasonable prices. In 1966 we issued guides on fresh vegetables, vegetables for processing, melons, potatoes, sweetpotatoes, and turkeys.

### Food Purchase Programs

Food purchase programs have two basic functions besides stabilizing farm prices—they relieve temporary oversupply and they provide food for needy families and for schools and State institutions. In 1966, we purchased chickens, turkeys, beef, margarine, shortening, fruits and vegetables, peanut butter, honey, dry beans, and dry peas, for distribution to the needy and to State institutions, and for school lunches.

### Market News

The Federal-State Market News Service flashes up-to-the-minute information on prices, supply and demand of farm products from coast to coast to help farmers and marketers know what supplies are available, where, and at what price.

> More than 170 Federal Market News offices (tied in with hundreds of State offices) gather this information daily and make it available across the nation through a 20,000 mile leased wire network. More than 100,000 different reports, covering all farm commodities, were prepared and distributed in 20 million separate mailings. The mass media also cooperate extensively in getting market news to the public.

We made progress during the year in developing the second connection with the Agriculture-Weather Circuit. In this project, our market news is transmitted on existing Weather Bureau networks to cooperating radio and television stations and newspapers. Plans were made for Department participation in the Tri-State Weather Bureau Network out of Tallahassee, Fla., to be inaugurated in fiscal 1967. The Mid-South Network, out of Memphis, Tenn., was the first such cooperative venture, starting in April 1963.

### Information Needed for Sound Farming Decisions

We live in an age of increasing dependence on facts. In 1966 we celebrated the centennial of nationwide crop and livestock reporting, emphasizing the importance of timely, reliable, statistical information.

Our Statistical Reporting Service provides facts on production, supplies, and prices of agricultural commodities through the timely publication of about 700 reports each year. This information is based on nearly 3 million reports submitted voluntarily by U.S. farmers and businessmen.

The accuracy of production estimates becomes vital as crops move into close supply-demand situations. Surveys and samplings to improve the accuracy of early-season and harvest-yield estimates are conducted in major producing areas for cotton, corn, wheat, and soybeans. More than 50,000 farms in a scientifically selected sample were visited in June 1966 in a nationwide enumerative survey designed to provide close national estimates on production of major farm commodities.

A reliable measure of consumer acceptance, preference, knowledge, and habits is vitally needed in the development of new foods or new food preparations. We regularly conduct studies to evaluate the consumer response that is so essential to planning improvements in the production, marketing, and utilization of agricultural products.

## OTHER FAMILY FARM PROGRAMS AND SERVICES

The programs and services provided or administered by the Department in behalf of our nation's family farms are many and far reaching. Some of them conserve and improve the natural resources on which farming depends; some make production and marketing more efficient, thus reducing costs and increasing agricultural income; others build farmers' "economic muscle" in the market place; still others protect producers against unfair competition or gouging; and some ease the ravages of natural disasters. But all are essential as we strive to meet the first major challenge—building stronger family farms.

## CONSERVING AND IMPROVING NATURAL RESOURCES

Many USDA conservation programs aim directly at strengthening and improving family farms and the family farm pattern of agriculture. These programs help farmers use their land in ways that increase income, while simultaneously assuring a lasting base of soil, timber, and water resources for future national needs.

### Conservation Districts

More than 95 percent of all privately owned farm and ranch land in the United States is within 2,995 soil and water conservation districts organized in every State and Puerto Rico. Each district has a working agreement with the Department.

More than 2 million landowners controlling over 685 million acres are cooperating with these local districts for conservation purposes. During fiscal 1966 our Soil Conservation Service assisted 1,167,186 of these owners in planning and applying conservation work. Over 744,000 owners applied at least one conservation practice. About 100,000 cooperators prepared new basic conservation plans for 34,000,000 acres.

### Great Plains Conservation Program

The Great Plains Conservation Program, now in its ninth year of operation, helps farmers in the Plains States cope with

hazardous climatic and soil conditions. We now have 23,772 contracts in force, covering over 45 million acres. More than one-fifth (22 percent) of the cropland involved in these contracts is being converted to more suitable uses, mainly permanent grass.

During fiscal 1966, 3,783 new contracts were signed. They provide complete conservation plans for 6,069,430 acres. Work was completed and contracts terminated on 1,831 farms totaling 2,669,885 acres during the year.

Jack Simpson of Moorcroft, Wyo., is a firm believer in the program. By reducing the risks of crop failure and assuring an adequate supply of livestock feed in drought years, he has stabilized income from his 8,460-acre wheat and livestock farm in the Intermountain Soil and Water Conservation District.

In 1966, a dry year in his area, Simpson harvested 26 bushels of wheat per acre. Most of his neighbors harvested less than 20 bushels. In the extreme drought year of 1960, when yields on most farms were too small to justify combine expense, he harvested 15 bushels per acre from 600 acres.

Simpson keeps a herd of commercial cows and grazes a variable number of steers according to the growth of his grass. He keeps a reserve supply of hay for drought years.

Under his conservation plan he has converted 189 acres of less suitable cropland to permanent grass and adjusted his livestock herd for proper use of all his grassland.

He terraced his crop fields and practices stubble mulching to protect the soil and conserve moisture. On his range land, he has built 10 ponds and dug 3 wells for stock water and has rearranged fencing to permit better management of the grass.

### Agricultural Conservation Program

More than one million farmers, ranchers, and woodland owners participated in the Agricultural Conservation Program during fiscal 1966, applying needed soil, water, woodland, and wildlife conservation measures on their privately owned lands with cost-sharing help from the government.

While costs of these conservation practices are shared about fifty-fifty on the average, adjustments may be made to reflect land needs, the speed of action required, or the economic resources of farm families. Such adjustments are made locally by elected farmer committees of the Agricultural Stabilization and Conservation Service which administer the ACP at the county level.

Farmers and ranchers constructed over 60,000 farm ponds with Agricultural Conservation Program cost-share assistance. There are now more than 2.5 million ACP ponds in use. Their combined surface area at high water level approximates that of Lake Ontario. The capacity of all ponds would amount to perhaps 15 million acre-feet of water—more than enough to supply all family uses of water in the United States for about a year.

The farm pond is essential for holding and making available the right amounts of water at the proper time for thirsty crops and livestock.

The detention structures are also essential to any clean streams program. They hold back heavy runoff, prevent siltation, backstop the major rivers, and hold precipitation in the upper reaches of watersheds where it becomes the key to soil fertility, thus controlling the kinds and amounts of all plant and animal life.

### Cropland Conversion Program

While some cropland which has been in conservation uses is being returned to production in 1967, land and people adjustment programs in 1966 continued to shift land out of unneeded crops and into insistently needed public benefit uses. This trend is likely to continue, because the current excess capacity of our land to produce crops can be employed to fulfill other land-use needs.

Under the Cropland Conversion Program, initiated as a pilot operation in 1963, we continued to explore new ways of improving farm family income through the conversion of land from crops in surplus to recreation, wildlife habitat, grass, trees, and other long-range income producing uses.

Farmers and ranchers participating in the program receive adjustment payments, cost-share conservation payments, and technical assistance to help finance the conversion of their land to systems of farming more in keeping with present and future needs.

In the 1966 calendar year, new 5- to 10-year agreements were authorized in 67 counties of 21 States to provide additional experience with different types of land-use adjustment methods and opportunities. Some 20,000 acres were signed up, bringing the total over the 4-year period to 460,000 acres. Experience gained under CCP in previous years helped lay the groundwork for the Cropland Adjustment Program which was launched in 1966 as a provision of the Food and Agriculture Act of 1965.

### Cropland Adjustment Program

In its first year the voluntary Cropland Adjustment Program proved to be an effective tool for balancing program benefits between farm and nonfarm people as well as for helping to balance farm production with need.

Under CAP in the 1966 calendar year, 2 million acres of cropland on 36,000 farms and ranches were shifted out of crops and into long-term conserving uses that serve the general public with outdoor recreation, natural beauty, open spaces, and the prevention of air and water pollution.

Farmers taking part in the program receive adjustment payments related to the value of the crops normally grown on the land taken out of production. And they are eligible for conservation cost-share assistance on the diverted land.

### Conservation Reserve Program

The Conservation Reserve Program is moving toward its termination in 1972 as farm contracts expire year by year. Some 3,000 contracts terminated in calendar year 1966 leaving a remainder of 122,812 out of a peak total of 306,186. Correspondingly, CRP acreage dropped to 11,110,219 acres, or to 40 percent of the 1960 level of 28,660,000 acres.

### Conserving and Improving our Forests

Forests offer much more than timber to the economy. The National Forests, for example, provide forage for farm and ranch livestock, food and shelter for wildlife, and much of the water supply that agriculture must have to exist.

The Department's interest in the Nation's woodlands does not end with the National Forests. Our forestry programs for non-Federal land offer both technical and financial assistance to the States to help protect, manage, and improve 396 million acres of forest land in State and private ownership. Our forestry research undergirds all efforts to improve and practice better forestry nationwide.

*Helping Woodland Owners.* During 1966 fiscal year, under our regular cooperative programs with States, we gave technical help to 113,000 woodland owners, assisting them in managing about 7,028,000 acres of privately owned small forests from which they sold $19,884,000 worth of timber.

*Forest Fire Control.* Since 1960, the acreage of non-Federal lands brought under organized fire protection has steadily increased. Of the 519 million acres needing protection, 473.6 million are now under the Cooperative Forest Fire Control Program—up from 77 percent of the total in 1960 to 91.2 percent in 1966. About 3 million acres are being added each year to the area under organized protection.

*Forest Cooperatives.* We are continuing to encourage small local forest landowners to form cooperatives to improve management and marketing. To date, 30 forest-based cooperatives are in operation throughout the country.

> At year-end, three new cooperatives were being organized in Minnesota to process and market maple syrup. In the State of Washington, a new cooperative will provide services in forest management and forest products marketing. A three-State cooperative was being organized to provide similar services in Michigan, Wisconsin, and Minnesota.

Forestry cooperative advisory groups have been set up in 30 States. With help from regional and area offices and the USDA Committee on Forestry Cooperatives, these groups provide technical aid in organizing new co-ops.

### Soil and Water Conservation Research

Agriculture, industry, and cities all compete for water. As the competition increases—and it will—conservation researchers not only must develop new sources of water, but they must also increase our efficiency in collecting, conveying, storing, and using the water we have now.

### Making Irrigation More Efficient

Annually about 76 million acre-feet, or nearly 25 trillion gallons, of irrigation water never reaches farmers' crops. It seeps from canals; it evaporates; it nourishes weeds. Some of it runs off during careless irrigation and is wasted. Present irrigation

methods are so inefficient that it is often cheaper to waste water than pay for the labor necessary to conserve it.

We are giving these problems a great deal of attention.

Among many recent advances in water conservation, our Agricultural Research Service scientists have developed a method for spreading a harmless chemical to retard evaporation on the surface of stock ponds and small reservoirs. This practice could save as much as 5 trillion gallons of water annually in the 17 western States.

Our scientists have also developed an automatic irrigation system that is remotely controlled by radio signals and operated by compressed air. Besides the potential for saving vast quantities of water, the new system introduces the concept of automation into an area of agriculture that previously required enormous amounts of labor.

*Draining Wet Land.* While some areas of our nation always need more water, other sections have too much. Excess water is the dominant problem on nearly 60 million acres, or 14 percent, of our cropland. High water tables restrict root growth in spring, lowering resistance of plants to drought in summer. Water ponded in fields keeps farmers from using modern high speed tillage and harvesting equipment; hillside seeps and springs similarly reduce farming efficiency. In the West, irrigation projects depend on subsurface drainage to prevent salts from accumulating in the soil and rendering the land useless.

Our drainage investigators have developed a method for trenching and installing flexible plastic drain pipe in a single operation. The pipe trench is small and installation in orchards does not damage trees. The pipe is a continuous tube, which eliminates misalinement of pipe sections, and control by a laser beam keeps the pipe on uniform grade.

*Reclaiming Saline and Sodic Soils.* In the arid West, accumulations of salts in the soil impair the use of nearly 8 million acres of irrigated cropland. Another 16 million acres are endangered by salt buildup.

Salts move upward in the soil with soil moisture. Either plants take up the moisture or it evaporates from the soil surface, leaving the salts behind. Unless leached out by rain or excess irrigation water, they accumulate in the root zone.

In recent years salinity research has developed:

A method for reclaiming sodic soils, which are soils high in salt content and no longer productive, by leaching them with salt water. This new method could restore productivity to millions of acres in every arid country in the world, utilizing water as salty as sea water.

Tests of crop varieties for salt tolerance. Among crops that have been tested are fruits, vegetables, safflower, most small grains, corn, soybeans, and ornamental shrubs.

A salinity-recording instrument that can be buried in the field. The instrument gives a continuous reading on salt buildup in the soil and indicates to the farmer when to leach his field. Development of this instrument was announced in 1966.

*Conserving Soil Moisture.* Recurring drought plagues much of our nation's agricultural land. In one year out of three, for example, inadequate moisture limits plant growth in the Great Plains. If the large amounts of water lost by evaporation and

transpiration were reduced, the rain and snowfall in the Great Plains would be more than adequate for good plant growth and would still provide sufficient water for cities and industry.

Our scientists are seeking ways to conserve available soil moisture and to make available moisture go further.

## EFFICIENT FARMING: THE ROLE OF RESEARCH

The progress of American agriculture is fed from a vast reservoir of agricultural research. We continue to add to this reservoir year by year.

### Improving Production Efficiency

*Livestock.* At our new USDA Meat Animal Research Center we are looking for ways to reduce losses in young livestock, as well as methods of raising them to marketable size more quickly and cheaply. Farmers are now saving more farrowed pigs by a simple method of mouth-to-mouth resuscitation which revives up to two-thirds of apparently stillborn baby pigs.

Diseases that restrict production and increase food costs are being eradicated by Federal-State efforts. During the 1966 calendar year, hog cholera was eliminated in Utah, Montana, and Alaska, and 39 percent fewer outbreaks of the disease were recorded in the nation. We began a concentrated drive to complete the eradication of sheep scabies. The last two States, Arizona and California, were freed of the screwworm fly. We are working with Mexico on a long-term program to prevent reestablishment of screwworms in this country.

> Scientists at the Kansas Agricultural Experiment Station developed an effective preventative for legume bloat, a condition estimated to cost producers of livestock about $100 million annually in death losses and losses in production. The use of legume plants in livestock feeding has been seriously limited because of their bloat producing properties. Otherwise, legumes are desirable feeds, high in protein and other nutrients. The preventative, Poloxaline, will allow legumes to be used more freely.

Physiological studies on the use of hormones and other chemicals in livestock have now culminated in the development of successful procedures for controlling the breeding season of cattle, sheep, and swine. Iowa, Wisconsin, Illinois, Michigan, New York, Missouri, Kansas, Nebraska, and California have participated extensively in this work. This development makes it possible to control the breeding season of these classes of animals to relatively short and desirable periods. It simplifies and reduces management cost and promises to make the application and benefits of artificial insemination more useful to the beef, sheep, and swine industries.

*Poultry.* Scientists are seeking to increase egg production by conditioning hens to lay an egg in an average of 18 hours instead of the usual 24.

Researchers at the Pennsylvania Agricultural Experiment Station have developed a laying house management system that

permits high productivity of layers and efficient use of labor. The unique features of the new system are a sloping wire floor and anewly developed plastic rollaway nest. Floor eggs roll to the aisle where they are easily gathered, along with nest eggs from trays behind the rollaway nests.

*Crops.* Advances in crop research match those in livestock and poultry. Cotton growers in California were shown how to cut costs by reducing the number of tillage operations from nine to four. Farm production expenses will be lowered by use of a new harvester that strips only the leaves from alfalfa, as well as a self-propelled machine that transfers tender fruit from pickers' hands to bulk bins without injury. Within a year nearly all of the U.S. date crop will be harvested mechanically with equipment designed by our agricultural engineers.

A new and more productive forage crop was developed for the Southeast—a sorgo-johnsongrass cross—and crops that resist diseases and pests and that yield better were released to growers. These included three new wheats, two varieties each of cotton and rice, and a new oats, feed barley, soybean, Korean lespedeza, and blue lupine. One of the wheats, Nugaines, should make a substantial contribution to the wheat needs of the world, for it is an improved selection of the Gaines variety that recently set a world record yield of 209 bushels per acre under experimental conditions.

Our scientists made additional discoveries from basic research that should lead to more efficient future crop production. They determined the structure of a second nucleic acid, one of the basic cell components transmitting hereditary characteristics—a discovery that offers hope for control of genetic defects and diseases. They also opened a possibility for blocking the flowering of weeds and making fruit buds stay dormant to escape winter damage. This possibility results from the isolation and structural identification of a natural chemical in plants that makes them "grow old" faster.

### More Efficient Marketing

Savings result from the continuing progress of marketing research. For example, our researchers established that price discounts averaging $4.50 per bale can be avoided if ginned cotton is dried to no less than 5 percent moisture content.

We found that substituting boxes for baskets could cut expenses of Eastern peach growers by 12 to 25 cents per container.

We learned that expensive spoilage losses can be reduced by using a new USDA-developed forced-air precooler in fruit and vegetable packing houses and by maintaining ideal transit temperatures for tomatoes. Citrus fruits can now be shipped in economical 4/5-bushels boxes during the entire marketing season if they are loaded in a new way that allows more rapid and uniform cooling.

Overseas markets for perishable foods are becoming readily available, due to shipment in refrigerated trailers that need not be disturbed

between loading and arrival at overseas food warehouses. During the year test shipments of frozen poultry and chilled orange juice arrived in Germany in excellent condition.

We helped reduce food costs during 1966 by finding ways wholesalers can lower operating expenses and reduce time and waste in packaging produce and filling meat orders. Substantial cost reduction will also result from use of a mechanized system, designed by our Agricultural Research Service, for weighing and packing cut-up poultry parts at processing plants, and from following our recommendations on the operation of retail bakery departments.

### New Industrial Uses

The ever ongoing search for additional industrial uses for agricultural raw materials is opening or expanding markets for farmers. Crude pine gum from our southern forests, for instance, can be converted into inexpensive chemicals replacing costly materials now used in producing high-quality plastics, adhesives, and paints.

Similarly, we found new industrial uses for corn during the year. A process for making rigid urethane foam insulation from corn starch opens a potential market for 100,000 bushels of corn. Our scientists also developed the first commercially promising plastic made from corn sugar.

Our scientists perfected a way of processing a palatable meal for animal feeding from crambe, a new oilseed introduced by USDA about 5 years ago. Research had previously developed a procedure for extracting the industrially valuable oil, and about 3,500 acres of crambe were grown by farmers this year.

We also found two wild plants, euphorbia and vernonia, that may become new domestic crops since their seeds are rich in epoxy fatty acids, now made synthetically for use in plastics and paints.

Other research is helping agriculture regain former markets for farm products. Cotton batting made more resilient by an ARS process is again going into automobile seat cushioning, and sheared sheepskins tanned by our glutaraldehyde process are once more used as paint-roller covers.

Seed orchard programs for producing genetically improved seeds of the Southern pines are developing very rapidly.

What was once only a hope that trees could be genetically improved in economically important ways is now a well established fact. We know that Southern pines strongly inherit straightness, resistance to some diseases and the density and fiber length of wood. This information is important to the pulp and paper industry. It lays the groundwork for growing more timber on less land, and for mechanizing forest operations, because of the more rapidly growing and more uniform crops of forest trees which breeders will be able to produce.

An 11-State seed orchard program has developed within a single cooperative project of North Carolina State University at Raleigh. Sixteen

pulp and paper companies and three State Forest Services have cooperated in the project with the university scientists to produce 64 seed orchards. Many of these orchards are now producing genetically improved tree seed on a commercial basis. In a few years the annual crop will produce enough seed to reforest 300,000 acres annually.

## THE EDUCATIONAL CHALLENGE

With agricultural production techniques changing faster than ever before, a heavy burden falls on our problem-oriented educators, such as Cooperative Extension workers, to adapt new research developments and techniques to practical farm situations.

One of our newer Extension innovations to meet this problem is a more specialized approach to field staff assignments. Specialized agents are assigned to a multi-county area to practice in their subject-matter fields rather than operating as generalists on one county.

Forty-five States are using this technique in varying degrees.

### Farm Labor

We continued to develop improved educational programs and materials concerning farm labor problems. A national workshop for State Cooperative Extension Service administrative officials and specialists was held to review the national farm labor situation, identify Extension responsibilities, and develop an education program framework to solve present and future problems.

### Developing Least-cost Enterprises

Electronic data processing is helping farmers keep business records and use the data to analyze management problems. In 30 States, about 5,000 farmer cooperators are now using this technique. Linear programing is being adapted in 17 States to help producers with decisions ranging from least-cost programing of rations to planning the types and balance of enterprises for the best use of total farm resources.

### DHIA Boosts Dairy Income

The hard-pressed dairy industry is realizing additional income as a result of the Dairy Herd Improvement Program. The DHIA now includes nearly 2 million cows in 34,000 herds.

Cows owned by dairymen participating in the DHIA program are returning over $200 more in milk sales per cow than those owned by non-participants. Average per cow production in DHIA herds is 12,127 pounds of milk—4,668 pounds above the average of cows in herds not enrolled in the improvement program.

### Good Management Boosts Income

Here are some examples of management progress in several States.

*Wisconsin;* More than 22,000 families are participating in a Wisconsin Extension farm management program. Third year

participators increased their incomes three and one-half times over first year cooperators.

*South Dakota:* Extension assists South Dakota farmers with budget planning as a method of analyzing and improving their farm businesses. A survey of proposed changes in plans for 55 farms indicates that these changes may increase net income more than $1,000 per farm. Adoption of these changes by all farmers would mean a $50 million increase in the State's net income.

*Pennsylvania:* Low income farmers in Pennsylvania are advised on cropping programs, crop varieties, weed control, fertilizers, and other agronomic practices. Generally, crop production increases by from 50 to 100 percent on the demonstration farms after 3 years in the program. Milk production increases an average of 2,000 to 3,000 pounds per cow on each farm in the same period of time. Some low-income farmers who enrolled are no longer considered low-income farmers.

*Tennessee:* A group of Tennessee farmers cooperating in a pilot project co-sponsored by the Cooperative Extension Service and Tennessee Valley Authority raised their average net income from $3,699 in 1962 to $6,957 in 1964. Projections by electronic computers indicate that the 1967 net incomes for these farmers will average $9,450.

*Mississippi:* The Mississippi Cooperative Extension Service is in the midst of an intensive 5-year educational program designed to increase profits by reducing production costs of cotton. Large plantation owners as well as low-income farmers are participating in the program. In 1966, Mississippi cotton farmers saved over $10 million by eliminating unnecessary applications of insecticides.

## STRENGTHENING FAMILY FARMS THROUGH COOPERATIVES

From long experience farmers have learned that what they cannot do as individuals they can often accomplish by working together. Thus, much of our farmers' economic strength is provided by cooperatives. For example, cooperatives aid farmers in marketing about 65 percent of the milk and 40 percent of the grain produced in the U.S.

Five out of six U.S. farmers belong to one or more of the 8,000-plus marketing, purchasing, and related service cooperatives now functioning. These farmers annually receive about $450 million additional income in patronage refunds from these businesses.

Our Farmer Cooperative Service helps cooperatives improve their services to the nation's farmers. We study and compare costs in selected cooperatives that handle grain, tobacco, rice, cottonseed, soybeans, and cotton. These comparisons help cooperatives correct deficiencies and adopt better methods, thus shaving marketing costs.

FCS has begun a study of coordinated marketing practices by selected cooperatives. We expect this study to produce guidelines which smaller processing cooperatives can use to make their marketing operations more efficient.

FCS helped a new cooperative sales agency in Florida develop its operations and sales program—analyzing distribution methods, customers, and markets of members' organizations. In its first year this cooperative will market about a third of all the canned citrus products produced in Florida, with the exception of concentrates.

A nationwide study of 234 wool pools marketing 16 million pounds of wool for 36,000 growers showed that growers could add 3 to 4 cents a pound to their wool returns through improved pool organization, assembling, grading, selling, and management practices. We issued an educational circular giving guidelines on the organization and operation of wool pools.

Another special study showed Louisiana soybean producers how they could increase their incomes by $1 million in 1967, and by as much as $4 million in 1970 through specific recommendations on storage, handling, and transportation.

Mergers of cooperatives often can bring vast savings to farmers over a period of years. Our FCS staff works closely with managers and other key employees and with farmers on boards of directors studying the potentials for combining operations and the best ways to put them into effect.

## "POLICING" THE MARKET PLACE

Another area of USDA service in behalf of stronger family farms involves regulatory programs which provide "rules of the road" for the agricultural marketing system. Without regulations, the market could become as chaotic as a community without police. This fact is recognized by farmers, marketers, and consumers alike.

### Regulatory Programs

The Department administers Market Regulation Programs to protect farmers, marketers, and consumers against misrepresentation and unfair practices, and to assure dependable supplies and reasonable prices. The regulations are authorized by such legislation as the Packers and Stockyards Act, the Perishable Agricultural Commodities Act, the Federal Seed Act, and the U.S. Warehouse Act.

Our Packers and Stockyards Division received nearly 6,000 complaints during fiscal 1966—an increase of almost 25 percent over the previous year. We settled nearly 3,700 of these on an informal basis, resulting in payments to complainants of more than $1.5 million. Other complaints were or are being investigated to determine whether they require formal action, or may be settled informally.

We conducted several investigations of meat and poultry procurement and merchandising practices, leading to formal actions against a number of firms alleged to have been "paying off" for

the privilege of doing business with national retail food chains. Other investigations revealed that consumers were being misled by false and deceptive advertising practices. Through both formal and informal proceedings, we have eliminated many of these practices.

We continued our "spot checks" of the operations of livestock auction markets. Markets were checked in 7 States, and the first spot check of dealer operations was conducted in 1 State.

Through closer supervision of scale tests and stricter application of testing procedures, our P&S Division substantially reduced the number of inaccurate scales and weighing violations in the livestock industry. Many old, inaccurate weighing facilities were taken out of service and new equipment was installed at a cost of approximately $600,000 to the livestock industry.

In a continuing effort to improve cooperation and coordination in enforcing the Packers and Stockyards Act, formal Memorandums of Understanding were signed with 21 State agencies—bringing to 29 the number of such agreements now in effect.

### Perishable Agricultural Commodities Act

More than 1,900 new complaints were filed during fiscal 1966 under the Perishable Agricultural Commodities Act, mostly involving failure of purchasers to pay for products or failure of sellers to deliver according to contract terms. Informal settlements were made in 988 cases, resulting in payments of $2.4 million to those owed for the produce. We issued 318 formal orders, awarding reparations amounting to more than $1 million.

> Of 407 disciplinary cases filed under PACA in the fiscal year, misbranding of produce as to grade, net weight, State of origin, etc., was involved in 321 cases. An East Coast firm had its license suspended for 90 days for shipping 20 misbranded car and trucklots of potatoes. Although Federal-State shipping point inspectors had given notice that the potatoes failed to measure up to the U.S. No. 1 grade marked on the bags, the firm shipped the potatoes without regrading them or changing the markings.

### Federal Seed Act

In enforcing the Federal Seed Act—a truth-in-labeling law—we made more than 26,000 separate tests on seed samples during fiscal 1966. These tests help assure the integrity of the labels on which farmers and consumers must rely when buying seed—information which is needed for successful planting—and also protect farmers and consumers from unacceptable imported seed.

Our transportation service program is another valuable aid to the agricultural community and marketing system.

We participated in 90 transportation rate and service cases in fiscal 1966 before carrier bureaus, regulatory agencies, and the courts. In one case, Department specialists helped agricultural interests obtain a reduction in rates on feed grains to Western States, resulting in an annual saving of over $3 million.

### Commodity Exchange Authority

Our Commodity Exchange Authority serves both producer and consumer interests by helping to safeguard competitive pricing in commodity futures markets at Chicago, New York, and other exchange centers.

CEA maintains daily surveillance of trading in 15 regulated commodities on all active markets. It watches the operations of large traders and prevents price manipulation, fraud, and other practices prohibited by the Commodity Exchange Act.

In calendar year 1966 futures trading in regulated commodities reached an all-time record for the fourth successive year. The year's trading in all regulated commodities came to 17.3 million transactions, valued at $87 billion. Trading was stimulated by a reduction in stocks of farm commodities, increased domestic utilization, and intensive and growing demands from abroad. These developments were attended by price risks which substantially increased the hedging use of most leading markets. They also contributed to increased speculative activity in the larger markets.

During 1966, we made extensive recommendations to amend and strengthen trading and brokerage regulation under the Act. Such legislation is particularly needed in view of the heavy futures trading in leading commodities and extensive public participation in commodity markets.

## AID IN FARM EMERGENCIES

Special aid programs are necessary to help farmers survive the effects of natural disasters such as drought, floods, fires, hurricanes, tornadoes, and earthquakes. These programs were widely used in 1966.

### Federal Crop Insurance

This protective service enables farmers to put a floor under their losses from flood, drought, freeze, and other natural disasters—by insuring their production expenses.

High annual expenses and capital investments involved in modern farming make an insurance guarantee of production costs a critical need of more farmers every year. Without it, some farmers hit by crop failure could not continue farming.

In the 1966 crop year farmers had more protection against crop failure than ever before. They paid $37,000,000 in premiums for a record of $640,000,000 of Federal Crop Insurance protection.

Federal Crop Insurance paid indemnities of $25,600,000, representing 69 percent of the premiums in 1966 compared with the $1.13 paid for each $1.00 of 1965 premium. The 1966 crop year was the eighth year in the last ten in which premiums exceeded indemnities.

A Washington wheat farmer who suffered a heavy loss in 1966 for the first time in many years said: "Without crop insurance my loss this year would have been . . . fatal to me as a farmer. . . . The entire future of my farm operation would have been greatly altered."

Sheep concentrated on the driveway of a flooded farmstead.

Aftermath of a flood.

A Utah farmer after a poor crop in 1965 borrowed from another source to pay his bank loan for his 1965 crop expenses. The bank decided it could not finance him for 1966. A USDA credit expert explained to the bank the farmer's protection under his Federal Crop Insurance policy. The decision was reversed, the bank advanced the funds needed to keep the farmer in business, and a good 1966 crop has made all parties happy.

### Cost-Sharing

Farmers in 339 counties of 33 States obtained emergency cost-sharing assistance under the 1966 Agricultural Conservation Program to repair and restore farm lands and facilities damaged by natural disaster.

This helped farmers get their lands back into shape for producing crops. It enabled them promptly to restore vegetative cover on pasture and range lands, make drainage or irrigation systems usable again, and repair fences damaged or carried away by floods.

A major share of the cost of such emergency conservation projects is borne by the program. The allocations in some instances pay as much as 80 percent of the total cost, depending on the circumstances of the cooperating farmer, the extent of damage, and other factors.

Allocations totaled more than $11 million, nearly $8 million of it to repair flood damage and $3,300,000 to aid recovery from earthquakes, tornadoes, forest and range fires, and drought. The 1966 allocations, however, were only about half the record 1965 total.

### Haying and Grazing Program

Hot, dry weather prevailed over most of the country for the summer months of 1966. Many areas experienced extreme drought. Temperatures of 90 degrees or above extended for periods from 30 to 54 days. Normally-grazed lands could not provide adequate pasture even in late June. The hay crop was short in many areas, the first cutting in some instances failing to supply enough to keep livestock through the summer.

The extent of the need for the haying and grazing program beginning early in July and continuing through September was made obvious by the number of States and counties requesting aid. For the greater part of this period all counties in Kansas (105), all in Missouri (114), 70 out of 77 in Oklahoma, 48 out of 67 in Pennsylvania, 58 out of 69 in South Dakota, and 44 out of 55 in West Virginia used the program.

Altogether, haying and grazing privileges on lands retired or diverted from crop production were provided in more than 1,000 counties of 32 States. This was only slightly below the record of 1,068 counties in 31 States in 1964.

### Livestock Feed Program

Winter caught the Northeast well into its fourth year of drought. During this period feed and forage stocks steadily di-

minished, leaving little in reserve for livestock growers or dairymen.

Nearly 28,000,000 bushels of feed grains owned by the Commodity Credit Corporation were sold at reduced prices to farmers under the 1965–66 livestock feed program extending from July 1965 through June 30, 1966. At the peak of the January-June 1966 period of use, 245 counties in 22 States were taking part in this program.

Because of the location of the inventories and an upward trend in market prices, changes were made by ASCS in the prices at which CCC-owned feed grains were available to eligible farmers taking part in the 1966–67 livestock feed program.

In September 1966, we announced an increase in the price from 75 percent to 90 percent of the local support level for foundation herds of livestock, including producing dairy cattle, sheep and goats. For other eligible livestock, the price basis was set at 115 percent of the local support levels, compared with the previously established 100 percent.

Despite this increase, eligible farmers taking part in the 1966–67 livestock feed program can buy feed grain from CCC at essentially the same discount below market prices—in terms of cents per bushel—as in the previous year.

Another change in the 1966–67 program limited the maximum daily allowance of CCC-owned feed grain to 5 pounds per animal unit instead of 10 pounds.

### Emergency Credit

In the wake of major loss from natural disaster, credit is urgently needed for rebuilding and starting operations again.

More than 25,000 farmers and ranchers received an all-time record of $105 million in FHA emergency loans during 1966. Loans were made to 8 percent more farmers than in fiscal 1965. The total advanced was up 33 percent.

### Food Relief

In addition, USDA food was made available for emergency relief of disaster victims such as people driven from their homes by Hurricane Betsy in September 1965 and those left without food when a devastating typhoon struck American Samoa in January 1966.

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The productivity of the American farmer is the foundation of our economy. In return for his contribution the American farmer deserves a fair share in the nation's prosperity. He deserves opportunity to grow and prosper, opportunity to operate competitively and profitably in the American economic system. The achievements of 1966 indicate that such opportunities are at last being opened.

We have entered a new era in agriculture. We know that abundance can be assured for the American economy. And we

The American farm—foundation of the Nation's economy.

A farm in Minnesota: shorthorn cattle in permanent pasture.

have sound reasons for believing that with cooperation among producers, the trade, agribusiness and government, a workable balance can now be held between supply and demand. Such balance is the first requisite for continued and expanding economic strength in agriculture.

But we know also that the next few years are both crucial and promising. They are crucial because it is vitally important that farmers and government use the new farm programs wisely and efficiently. If these programs continue to prove themselves, they will undoubtedly be extended with refinements in the decade of the 1970's. The years ahead are promising because the population and income explosions taking place here and around the world will continue to stimulate a strong demand for American food and fiber.

We have sound, going programs of research, education, and conservation. These programs will be even better tomorrow.

We have an efficient system for marketing agricultural products. It is continually being improved and it will be even more efficient in the years to come.

We have programs to aid farmers when they are victimized by drought, flood, and other natural disasters. These programs, too, are being sharpened and made increasingly effective.

If we build wisely in the new era that is at hand, we can look forward to a future of growing, balanced abundance for America—and a future of increasing prosperity for the operators of our family farms.

## THE SECOND CHALLENGE: TO REVITALIZE RURAL AMERICA

> "Why . . . must huge concentrations of unemployed and untrained human beings continue to pile up in financially unstable cities that no longer have the jobs, the housing, the educational opportunities, or any of the other prerequisites for a healthy and productive life? . . . Why are we not developing new uses for those rural areas that are rapidly becoming depopulated? Why do we still instinctively deal with urban and rural America as if they were separate, conflicting interests when in fact neither interest can be served independently of the other?"
>
> J. P. Lyford, in "The Airtight Cage."

About 45 percent of the nation's 35 million people with incomes below the poverty level—$3,000 for families and $1,500 for individuals—live in rural areas. This is true, even though less than 30 percent of the total population is rural. More than two-fifths of the people on farms are in the poverty income group. Farm workers and sharecroppers and their families are at the bottom of the heap. Their total incomes are usually less than $2,000 a year.

*Rural people are poor not only in money but in the necessities of life.* One-fourth of rural nonfarm homes are without running water. One out of four rural homes should be replaced or needs major repair.

The 1960 Census revealed that 73 percent of urban households headed by a male employed in the civilian labor force had an automobile, telephone, hot and cold running water, and sound housing. Only 60 percent of the rural nonfarm households and 44 percent of the farm households were that fortunate.

*Rural people are poor not only in personal possessions but in community facilities and institutions.* Thousands of U.S. rural communities lack adequate central water systems and sewage disposal plants.

Rural people lag almost two years behind urban residents in educational attainment. According to the 1960 Census the median school year completed by people 25 years old and over was:

| | |
|---|---|
| White urban residents | 11.5 |
| White rural nonfarm | 9.9 |
| White farm | 8.9 |
| Nonwhite urban | 8.7 |
| Nonwhite rural nonfarm | 6.4 |
| Nonwhite farm | 5.7 |

Health facilities in rural areas are inadequate. Rural children receive less medical attention than urban children. Isolated rural counties (those without an incorporated municipality of 2,500 or more) have only about half as many general hospital beds per 1,000 people as do metropolitan areas.

*Many rural people are "locked out" both by poverty and by discrimination.* Not only do rural areas contain proportionately more of the old and of the young who are not economically self-supporting, there are also more Negroes, more Indians, and more Mexican-Americans with poor jobs and poor incomes.

According to the 1960 Census, nonwhite farm families had median earnings of $1,263, compared with $3,711 for nonwhite urban families—one-third as much. Median earnings of nonwhite rural nonfarm people were $1,917—about half as much as the urban group earned. And nonwhite families lagged far behind white families in the same residence categories. Thus the median earnings of nonwhite city families were less than 60 percent of those of white city families while nonwhite farm families earned only about 35 percent as much as white farm families.

## THE EXODUS

Since the early days of World War II, the number of people on farms has fallen from 30.5 million to 11.6 million. Actually, the movement from the farms has been much larger than these figures suggest because some of the migration has been offset by births. The farm population has reared many more children than it needed to maintain its numbers.

The rural exodus, of course, has not been confined to farm people. Millions of rural nonfarm residents, too, have moved to urban areas hoping to improve their situation.

This has drained off far too many of the bright, educated young people who could provide vigorous leadership in the countryside.

The loss of people accompanied by an inevitable relative decline of local income has severely strained many rural communities. The tax base for the support of roads, schools, and other public services has either declined or, at best, has failed to keep pace with increased costs of public services. In many communities of rural America there are now too few people to support the business establishments, medical, dental, and other professions, churches and essential civic institutions needed for adequate living.

In the cities, on the other hand, massive migration has caused problems of assimilation, of combating slums, of providing relief for the unemployed and destitute, and of dealing with increased juvenile delinquency and crime.

The Nation saw some of the results of this accumulated mass migration in 1966, especially during the summer when congestion, frustration, disillusion, and despair took their ultimate toll in rioting and violence.

## THE RURAL COMMUNITY TODAY AND TOMORROW

Rural America is undergoing a dramatic transformation. Its population, traditionally thought of as largely farm people, is now nearly four-fifths nonfarm.

More than 10 farm boys are entering the labor force for every adequate size ($10,000 or more of annual marketings) farm unit becoming available. By 1980 only one rural resident in 7 or 8 may live on a farm.

As for rural America in general, for every 100 older men vacating existing jobs in the 1960's, 177 rural boys are reaching age 20. Unemployment and underemployment of men in rural areas in 1960 was equivalent to 2.1 million unemployed annually. In addition, in the absence of continued outmigration, oncoming rural youth will add 3.5 million persons to the rural labor force during the decade.

Unless we can expand jobs along with other opportunities for good living for rural Americans, the heavy exodus will continue. It is imperative that the people of America take control of their total environment and provide new opportunity—opportunity on the farms, in the towns, and small cities; opportunity to learn and earn; opportunity to live and grow; and opportunity to become productive citizens in whatever environment they find themselves.

For unless we can overcome poverty in rural America, we shall perpetuate a major seedbed of the problem throughout the whole nation. Many of the urban poor who are today overwhelming our cities were the rural poor of yesterday. And the rural poor of today, and their children, will be the urban poor of tomorrow. We must break the "chain of poverty" which tends to continue from one generation to the next.

## BETTER FARMING

Farming and farm-related industries historically have formed the economic backbone of the rural community. If they are to continue to do so, farm incomes must be raised. We must have proportionately more adequate-size farms; improved farmer bargaining power through cooperative bargaining, buying, and marketing; and sound adjustments in resource use. The farmer must enjoy a fair share of the benefits of his own productivity.

We have already pointed to the upswing in the income and prosperity of American farmers during the past 6 years. Many operators of family-size, efficient farms now have climbed to parity of income with comparable economic groups.

But more than half of the nation's farms are still too small in terms of resources and operations to provide a decent family living. An extremely important part of the nation's rural development effort must consist of programs aimed at developing these into fully adequate family farms.

### Supervised Credit an Effective Tool

The supervised credit provided by our Farmers Home Administration is an effective instrument in giving low income, underemployed farmers the lift they need. FHA not only provides credit for those who are unable to borrow from commercial sources, it helps its borrowers make and carry out annual and long-term development plans. FHA county supervisors study and review the entire farming operation of individual borrowers —not only the production aspects, but marketing, farm and

household expenditures, provisions for loan repayment, and other details that make the difference between success and failure.

Almost 90,000 farm families strengthened their economic position through our FHA farm ownership loan program during calendar year 1966. We advanced a record total of $239.1 million in loans to 13,395 farm families to buy or enlarge farms or to refinance their debts. Another 74,831 families continued to use FHA farm ownership credit obtained in previous years. Without the support provided by this program, many of these families might have quit farming to try their luck in the city.

We also helped family farmers finance crops, basic equipment, and other farm operating essentials through farm operating loans. We made 64,294 loans totaling $285.8 million in all 50 States, Puerto Rico, and the Virgin Islands during the year.

Here is what this type of credit can do.

> Back in 1957, young Jim Rex and his wife, Betty, of Floyd County, Iowa, had $43 in savings, a car, household goods, and a lease on a good 160-acre farm. On January 22, 1957, Jim borrowed $18,450 from the Farmers Home Administration and under good supervision started raising hogs on a modern, scientific basis. In 7 years he expanded his production from 16 litters to 160 litters and each year of his buildup he doubled his income from hogs. On December 30, 1964, he paid up his FHA loan in full and completely "graduated" to private financing.

These two loan programs not only give farm families a "leg up" on a better life; they also stimulate the local economy. The borrowed money is spent locally. About 7 out of 10 borrowers use their operating credit to buy or refinance machinery or other capital items. The farm ownership funds come from small town banks and other private sources. FHA insures the creditors against loss.

### Helping Farmers Work Together

The spirit of cooperation, long an outstanding characteristic of American agriculture, is still active. Through various programs, we help farmers combine their resources to boost their earnings and standards of living.

Research by our Farmer Cooperative Service shows that about half the volume of supplies purchased by two cooperatives in West Virginia go to low-income people. This is a much higher percentage than the co-op managers and others in the co-ops had thought. The study also showed that these low-income people were good credit risks.

Under our grazing association loan program, an incorporated group of family farmers and ranchers can buy additional land resources with FHA credit and operate the land cooperatively.

During 1966, we advanced $16 million to enable 1,700 farm and ranch families in 75 grazing associations in 10 States to buy or lease land for grazing purposes. Since the program came into actual operation in fiscal 1964, we have financed 126 grazing associations with $41.3 million in loans.

Recreation on a farm pond in Iowa.

This farm provides a wildlife area for hunting.

### The "New Crop"—Recreation

A decade ago who would have thought that recreation could be a crop more valuable to many a landowner than corn or cottonseed? Today thousands of farmers know that recreation can be "harvested" as an additional source of income.

With technical and financial help from a number of USDA agencies, more than 34,700 landowners and operators have established one or more income-producing recreational undertakings since 1961. More than 3,200 have changed their farming operations to emphasize recreation as a primary source of income.

> Six farmers donated some of their farmland and shared the expense of building an erosion control dam in Leavenworth County, Kansas. Before the dam was constructed, the county annually suffered heavy costs for rebuilding and repairing flood-damaged bridges. Now floodwaters are backed up on the six farms to form a lake. Cropland below the dam is protected. The dam also protects a railroad embankment. The lake provides recreation, not only to the six farm families, but to the entire community. The farmers have stocked the lake with fish, built lake-side cottages for rent and developed boating facilities. Today they are realizing additional income from farm recreation, while filling a growing need for more outdoor relaxation in the burgeoning Topeka and Kansas City areas.

Brooks County, Ga., is pioneering in pay-as-you-go hunting and fishing. The project was started in the fall of 1964 as a pilot operation, undertaken jointly by the County Resource Development Committee and the Extension Service.

The Brooks County Wildlife Association was organized by 55 farmers who felt the pinch of a declining agricultural economy. Among them, the 55 farmers control some 30,000 acres of land now supporting 275 fish ponds, 10 duck ponds, 38 dove fields, 1,500 quail feed plots, and 300 quail feeding stations.

Rural landowners established new outdoor recreation facilities at an accelerated pace in 1966. They converted 310,531 acres of land to recreation and wildlife use, 9 percent more than in 1965. About 4,300 landowners established new income-producing recreational enterprises and over 500 converted to recreation as their primary source of income.

These programs are not cure-alls. There are no cure-alls for the ills of rural America. But supervised credit, cooperative effort, and assistance in new income ventures are helping many thousands of disadvantaged and "boxed-in" farm families to earn a better living.

## EXPANDING RURAL HORIZONS

Agriculture and its related industries still constitute the economic foundation of rural America. But the need for local communities to seek new and expanded industries to provide jobs for the millions of rural unemployed and underemployed grows ever clearer.

A concentrated effort is required to make rural America more attractive both to live in and to work in so that private enterprise will want to put jobs and opportunity in the countryside.

There are profits to be made there. In most instances, land is cheaper, building costs lower, utility charges modest, and transportation facilities satisfactory. There is a labor pool of men and women eager to learn new skills.

With today's communications and transportation facilities, the old argument that industry and business could only operate efficiently and profitably in the metropolis no longer holds true.

### "Outreach" into Rural America

We have a substantial array of Federal programs to help rural America. But better coordination is needed among Federal, State, and local agencies. Many services available from Federal agencies are not being utilized by rural people to any appreciable extent because of a lack of knowledge and communication.

During the year we made a realignment of responsibility for rural areas development. A small staff in the Rural Community Development Service coordinates and expedites rural programs at the Washington level. RCDS has no operating responsibilities. However, it carries forward the essential "outreach" function of organizing and coordinating to assure that USDA facilities are mobilized to make full use of all Federal resources in rural areas, including those of agencies and departments outside the USDA. RCDS not only identifies programs throughout the Federal Government which are not now reaching people in the countryside, it also recommends courses of action through which these programs can be made available to rural people.

The responsibility for providing the administrative channel for the "outreach" function of rural areas development has been assigned to the Farmers Home Administration, with the educational leadership in this field, however, still resting in the Federal-State Extension Service.

To improve our contacts at the grassroots, we have established local Technical Action Panels, made up of experts in many fields, and keyed to multi-county development. Panel members include personnel from Farmers Home Administration (whose representatives are panel chairmen and "outreach" coordinators in the field), Soil Conservation Service, Agricultural Stabilization and Conservation Service, Extension, and other USDA field agencies. The Technical Action Panels tie all of our field offices together for maximum effectiveness. As a result, leaders in any rural county or region have on their doorstep USDA people to help them gain access to any Federal program.

Many rural communities have set up development committees to work with prospective industry in finding suitable plant locations, arranging financing, and securing trained and untrained workers.

There are more than 3,000 county rural areas development committees and 565 multi-county resource development organizations, in addition to Statewide committees, civic organizations, and local governments.

### Creating New Jobs

These local rural groups developed 5,625 economic projects with USDA help between July 1, 1966, and December 31, 1966. During 1966 such economic projects resulted in 55,176 new jobs. For example:

An intensive search for industry by the Randolph County, Ark., Development Council, will increase industrial employment by 950 when all construction is completed. Extension Service provides educational, organizational, and technical assistance to the Council.

A $500,000 bond issue was passed in January 1966 to establish an aircraft parts factory which will employ 250 persons. Another bond issue for $125,000 will be used to expand a picture frame factory to employ 125 persons. The county provided a building for a third company, which will employ 500 when a new facility now being constructed is completed.

While the number of jobs created directly and indirectly through rural projects under way or completed since 1961 is difficult to determine, we estimate that the total probably exceeds half a million.

### Rural Electrification Builds Jobs

REA borrowers are in an excellent position to help establish community facilities, tourist and recreational attractions, and agricultural and forestry projects. In fiscal 1966, REA borrowers helped set up 443 such projects. They gave assistance in finding and arranging credit, provided engineering and other technical services, and helped with plant location and furnished office facilities. We estimate these activities helped create 19,000 direct jobs and 12,000 indirect jobs.

The Jewell-Mitchell Cooperative Electric Company, Inc., Mankato, Kansas, aided by REA's RAD staff, helped local leaders plan and obtain financing for a packing plant which is expected to revitalize a sagging economy in the surrounding area.

The plant, now under construction, will employ 75 persons and raise farm incomes by providing a market to encourage cattle feeding operations. Funds for the $1.2 million plant come from a variety of local and Federal sources, including an REA Section 5 loan of $325,000 to the cooperative for reloaning for purchase and installation of part of the electric equipment and wiring.

The 1966 activity brings to almost 2,100 the number of commercial, industrial, and community facilities projects launched with the aid of REA borrowers since mid-1961. These projects have created directly and indirectly about 182,000 jobs.

### National Forests Spur Rural Economy

The harvest of National Forest timber not only sustains existing industries but is instrumental in starting new businesses in hundreds of communities.

In Flagstaff, Ariz., a new $3 million paper mill has started producing tissues, towels, toilet paper, and similar products out of raw materials mainly from the Coconino National Forest. Eighty new jobs are stimulating local retail sales and boosting the local economy.

Other new industries, drawing raw materials from National Forests, have begun operating recently in such small rural communities as Afton and Dubois, Wyo.; Payette and St. Anthony, Idaho; and some 30 others.

The sale of timber from the National Forests returns sizable income to the Federal Treasury. These receipts are steadily rising year by year, as sound management enables the Forests to supply more of the Nation's expanding need for wood. One quarter of the receipts is returned to the States. This, in addition to the jobs created in preparing the Forests for harvest and in the actual harvest itself, results in increased spending and economic activity in local communities.

There will be opportunities for even larger harvests and expanded rural industrial activity from dependable National Forest timber supplies as new uses are found for lower grade trees and as inaccessible stands of timber are opened up.

The first plywood plant in southwestern Colorado was established by the Montezuma Plywood Corporation with technical assistance from our Forest Service and an Economic Development Administration loan of $1 million. Logs are cut from the San Juan National Forest to supply the 35–40 million board feet of timber needed to produce about 85 million square feet of sheathing per year.

During the first 6 months' operation of this $4 million investment in the Cortez-Delores area 1,860 truckloads of logs were delivered to the mill, sizable increases were registered in consumption of natural gas and electric power, more than 22 million square feet of plywood were produced, and the new payroll totaled over a half million dollars. The mill employs 191 people. Numerous others are engaged in supplying the mill with logs.

### Jobs for Youth

Creating an atmosphere of opportunity for rural youth is another prime requisite for rural renewal. The Neighborhood Youth Corps, the President's Youth Opportunity Program, and Job Corps Conservation Centers all figured largely in this effort in 1966.

More than 165,000 underprivileged rural youths and young adults between 16 and 22 earned back-to-school money or acquired new job skills for future employment through the Neighborhood Youth Corps Program during the year.

Projects are sponsored by public or private non-profit agencies. The Federal Government pays up to 90 percent of the cost, with the sponsor contributing the remainder. Soil Conservation Districts, farmer and rural electric cooperatives, State Extension offices, USDA agencies, and organizations that work with USDA are among the sponsors.

Every Soil Conservation District in North Dakota participated in the program in 1966. They employed 149 young people.

The Nebraska Soil and Water Conservation Commission provided training and jobs for 290 young people. They worked in 78 Soil and Water Conservation Districts, 3 watershed districts, and in the Commission office. Of some 160 Nebraska youngsters

"terminated," 75 have returned to school, 37 have graduated to better jobs (3 with SCS), and 30 entered military service.

> One enrollee said, "If I hadn't received this opportunity, I don't know what would have become of me. Now I feel I belong."
>
> Another wrote in an unsolicited letter, "I wish to thank you and all the people connected with the Youth Corps for making it such a worthwhile and rewarding experience. I have had the privilege of working with and meeting wonderful people this summer. They have taught me much that I am sure will be of benefit to me the rest of my life. I am entering college soon, so I will be unable to sign up for the Neighborhood Youth Corps again."

The Caddo Electric Cooperative of Binger, Oklahoma, for the second year, sponsored a 12-week summer work project for 407 youths, who helped renovate libraries, repaired school books, cleaned and painted school rooms, maintained Little League baseball grounds, cut weeds in parks and along streets, worked in offices, and helped teach children in Head Start programs. Troy Enos, high school superintendent, said, "We are in a very low-income area. This program will help some boys and girls finish high school and go on to college."

The Fulton County Development Association of Salem, Arkansas, headed by the manager of North Arkansas Electric Cooperative, Inc., sponsored an NYC project for 45 boys and girls.

The Extension Service conducted NYC training workshops, short courses, and conferences in leadership, recreation, and grooming.

State and county Cooperative Extension Services provided summer work for more than 1,700 NYC youth. These young people assisted with surveys, helped in 4-H camps, provided special assistance to low-income youth, and worked with Extension home economists. Extension agents also gave educational assistance to Indian tribal councils in 11 States, helping them organize and carry out NYC projects. These projects have given employment to more than 6,000 Indian boys and girls.

> The Missouri State Extension Service employed 210 teenagers, assigning them to jobs ranging from helper-secretary to helper-archeologist. The archeology helpers worked with a team of Extension archeologists from the University of Missouri to excavate an Indian burial ground in the State.
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> In Mississippi, 8 girls helped an Extension specialist with a day-care school pilot project in a low-income housing area. They worked with children and gave nutrition information to mothers.

Our Forest Service had 6,964 participants in NYC projects. In Holly Springs National Forest in Mississippi, for example, the youngsters built concrete picnic tables and cleared a beach site for the Chowalla Lake Recreation Area.

In addition to NYC, our agencies helped young people find jobs in other ways. About 6,400 young men from Forest Service Job Corps Conservation Centers have been placed in jobs, entered the military, or returned to school. In addition, some 2,800 corpsmen have transferred to Job Corps Urban Centers for spe-

cialized vocational training. The Forest Service is currently operating 47 Job Corps Centers with an enrollment of 6,900. These young men are bettering themselves and, at the same time, improving the nation's recreation and natural resources.

Under the President's Youth Opportunity Program, REA borrowers employed about 1,800 youths during the summer as typists, clerks, and maintenance workers.

The USDA itself hired 1,872 students under the President's Youth Opportunity Program to help them continue in school. This was 432 more than the goal set for the Department.

In addition to jobs in the field, various agencies, notably REA, Extension, and Farmers Home Administration, gave jobs to a small number of students in Washington.

Miss K. C., 16, of Washington, D.C., said her experience changed her outlook on the future and enabled her to help her family by contributing $60 for her room and board. "Before I started working for FHA I had planned only to graduate from high school," she said. "But now I can see the real need for a higher education."

E. J., 17, also of Washington, D.C., completed his second summer under this program. His working experience, he says, has made him realize he must have a rounded education to better himself.

### Economic Opportunity Loan Program

The Economic Opportunity Loan Program which got underway in January 1965 is raising incomes and living standards for thousands of low-income rural people.

Loans are made to families at the bottom of the economic ladder, more than half of them existing on less than $1,500 a year for family living expenses. Isolated in poverty, with nowhere to look except to their own capacity for self-employment, their most common handicap has been lack of money or credit to equip themselves for more profitable work.

Economic Opportunity loans stake them to the tools, supplies, and equipment they need for a profitable farming enterprise or for following a trade or performing a service needed in their home communities. Our Farmers Home Administration makes the loans from funds provided by the Office of Economic Opportunity.

During 1966, FHA advanced about $27.7 million in Economic Opportunity loans to 21,600 low-income rural families and 336 small cooperatives serving low-income people

The cooperatives, with a total membership of 6,000 low-income rural families, used their credit to buy large-scale farm machinery, build marketing centers, and provide other facilities members could not afford individually, but could share through cooperative ownership.

By setting up a marketing co-op with a $27,000 Economic Opportunity loan from the Farmers Home Administration, 27 oystermen in Shell Pile, N.J., will be able to sell their oysters at about double the price they have been getting from local dealers. Many of these marginal-oyster tongers have incomes as low as $800 a year. The most difficult thing about starting this cooperative was, as a member put it, "to get

the people together." With the help of the local FHA supervisor and informational material from Rutgers University the 27 members gained an understanding of the cooperative concept and now are able to run their official meetings without help.

First studies of the results realized by borrowers who have had their loans approximately one year showed gains in gross family income averaging $2,800 a year for families starting nonagricultural enterprises, and $900 a year for families using loans to improve their farming.

The year-old loans are being paid back, on the average, faster than scheduled. As of June 30, 1966, FHA had received $4,019,690 in payments of principal and interest. As of that time, only $2,996,495 had matured on the loans advanced.

Since the program began in January 1965, loans totaling $54 million have been made to 45,350 families.

### New Rural Industries Based on USDA Research and Development

Industrial development in rural areas flows from many factors. An undramatic but basic type of activity is carried out by USDA and the State Agricultural Experiment Stations. Our utilization specialists, for example, helped set up a new plant for processing fruit and mixed pickles, relish, and other vegetable products at Albuquerque, N.M.

Farmer cooperatives all over the country are converting ARS research into profits.

The Cherry Growers, Inc., Cooperative at Traverse City, Mich., is using technology developed specifically for handling mechanically harvested fruit. Destemmers developed by USDA and Michigan State University remove the unwanted stems that sometimes remain on cherries after harvest.

Eloise Groves Cooperative at Eloise, Fla., and Ventura Coastal Lemon Growers Cooperative, Ventura, Calif., are now producing fruit juice powders through a USDA-developed foam-mat drying process.

Several large dairy cooperatives are using the USDA-developed foam spray drying method for producing cottage cheese whey as well as dried nonfat milk. The whey, formerly a nuisance waste product, can now be utilized in foods and feeds.

FCS carried on an educational campaign through Southern Consumers Cooperative, Lafayette, La., to acquaint farmers in 6 Louisiana parishes with their responsibilities and opportunities in forming a new sweetpotato cooperative.

A new USDA publication, "Public Assistance for Forestry Cooperatives," is showing small woodlot owners how to increase their incomes. FCS staff also helped form a new forestry cooperative complex in the Great Lakes region.

## TOWARD PARITY OF LIVING

### Rural Housing

Next to the lack of good job opportunity, rural America's greatest handicap is its obvious disadvantage in the facilities needed for good living, particularly housing and water.

Housing in rural America.

Old home—and new one financed with FHA loan.

The new rural housing program passed by the 89th Congress in 1965 more than tripled FHA's loan authority, put loans on an insured basis, and made it possible to make loans in rural communities up to 5,500 population.

We advanced a record $346 million in insured and direct loans during 1966 to bring better rural housing to over 200,000 rural people. This more than doubled the amount lent in any other single year.

Since 1961, FHA has advanced over $965.1 million to improve rural housing, compared with $187 million in the previous 6 years. The loans made since 1961 have improved housing for a half million rural people and created nearly 80,000 man-years of onsite employment.

During fiscal 1966 we provided more than $19.4 million to build and improve homes and rental units for 7,460 elderly rural people—almost doubling the number of people helped and more than doubling the amount loaned during fiscal 1965. Of this total, more than $15.1 million went directly to 6,500 rural senior citizens for building or renovating dwellings, and $4.3 million was lent to build or improve 535 low-cost rental units to serve 960 senior citizens.

Lack of money, of course, is only one of the housing problems facing the aged. The elderly need housing that is uniquely suited to their physical capacities. The Cooperative State Research Service currently is carrying forward a regional project to develop housing standards particularly adapted to the aged which will extend their ability to live independently. It seeks to provide housing models for people 55 years and older who either live alone or with a spouse, elderly friend, or relative, and who do not require special facilities for institutional care.

> An ARS architect had the limited budgets as well as the special needs of retirees in mind when he prepared floor plans and design suggestions for comfortable, convenient, and safe homes for older people. The plans should prove useful in suburban as well as rural areas.

Many families in rural areas have so little income that low-cost credit by itself is of little consequence. For these families we devised a self-help program. We assist groups of families to do most of their house construction work themselves on a cooperative basis.

> One of the first such projects was successfully carried out in the small rural community of Gouldtown, N.J. To each of 6 families FHA advanced $6,500. Under the guidance of an experienced building contractor hired by FHA, the families themselves did most of the construction. The completed homes are valued at between $10,000 and $11,500, exclusive of the lots. Loan payments are $39 a month, taxes about $25, and insurance about $5, making a total monthly payment of around $69. The weekly incomes of the families range from $42 to $67, much too low to afford payments on new homes built under ordinary circumstances, but feasible under the supervised self-help program.

During the year we also provided about $5.6 million in loans and grants for farm laborer housing.

We approved a $2 million loan and grant for labor housing construction at Pompano Beach, Fla. The new project, with running water and toilets, will replace hovels without electricity, running water, screens and glass windows. Rentals are expected to be $5 a week for single workers and $10 a week for family units. The project will house 1,680 farm workers, mostly members of minority groups.

### The Positive Approach to Water

Not many years ago water conservation was generally viewed as a way to stop floods from inundating land and property, bringing misery and loss to people in rural and urban communities alike. While this is still a basic objective, flood control now is tied to broadscale resource planning. We view conservation not only in terms of what water can do *against* a community but increasingly in terms of what it can do *for* a community.

Watershed projects can breathe life into struggling rural areas. We have seen these projects generate a whole series of community activities, attracting new industry and commerce and these in turn leading to new and better homes, schools, clinics, hospitals, and libraries.

Lewisburg, Ky., boasts a new plant making layer crates and prefabricated "hog parlors." A new water supply created by the Mud River Watershed Project served as the industrial catalyst.

A boat shop has opened to take advantage of business opportunities deriving from a newly-created 900-acre recreation lake, which is expected to attract several thousand visitors annually. More than 200 lakeside building lots have been sold. Construction underway includes 50 cabins, a $45,000 sportsman's lodge, 30 miles of public roads, and a new bridge costing $145,000. The mayor of Lewisburg estimates water is bringing 170 new jobs to the community.

At Russellville, also in the Mud River Project area, the Emerson Electric Company has completed a $4 million plant which employs 460 people. The Rockville Manufacturing Company, now employing 300 people, plans to double its personnel.

The Georgia Institute of Technology cites the Villa Rica area as one of the finest locations for new industry in the State. A major attraction is the availability of adequate water from multipurpose dams in the Little Tallapoosa River watershed project.

Six new industries employing approximately 450 people have opened plants in Villa Rica since the watershed project was started.

Carrollton, a city in the area, saved $100,000 because it was able to locate a needed sewage treatment plant on bottomland now protected from flooding by watershed improvements. A lake created by the project has a recreational value of $10,000 a year.

In 1964, the Southwire Company doubled the size of its plant, which meant doubling its water use, and the company plans to double its operations again in the near future. The plant now employs 800 people and has an annual payroll of $4 million.

In 1957 only 21 percent of the watershed projects then approved for operations by our Soil Conservation Service were multipurpose. As of June 30, 1966, the figure had increased to more than 50 percent.

Of 92 watershed work plans completed during fiscal year 1966, 70 included such purposes as recreation development and

municipal and industrial water supply storage, in addition to flood prevention.

### Water and Sewer Systems

The Poage-Aiken community facilities program, enacted in 1965, makes it possible for us to help approximately 1,400 rural communities each year build basic community facilities.

The program is growing rapidly. About 600,000 rural people will soon be benefiting from construction or improvement of the first 800 community water or sewer systems. These improvements are being financed by FHA through more than $149.5 million in loans and over $32 million in grants advanced in 1966. In addition, grants totaling $3 million were advanced to 300 rural public bodies for preparation of area plans for water and sewer systems. Also, 38 loans totaling approximately $5.6 million were made for development of watershed projects.

> Five water systems with 130 miles of pipeline, financed by insured loans from the Farmers Home Administration, are generating a complete transformation in the development of Warren County, Tenn.
>
> Since the installation of the 5 systems two years ago, 4 new industrial plants have located in the county; 260 new homes costing over $2 million have been built and 390 homes have been remodeled at a cost of $390,000. Seventeen new small businesses have been developed. New community buildings valued at over $500,000 have been constructed, including a church, post office, a wing on a school, and an addition to a college. The State has purchased $500,000 of land in the county for a new park, and a town has purchased its first fire truck.

Other USDA agencies cooperate with SCS, FHA, and local people in bringing water to rural America.

> Ranchers in Lovelock Valley of Pershing County, Nevada, used to carry water as far as 15 miles for household and laundry use. People living in the city of Lovelock were without an alternate source of water in case of emergency.
>
> Close cooperation between Extension and the local Rural Areas Development Committee has brought a new water system to 137 farm families in the valley and an alternate supply of water for the city.

REA borrowers are also active in sparkplugging rural water systems.

> The Pearl River Valley Electric Power Association, Columbia, Mississippi, working closely with the Farmers Home Administration, has helped install one central water system and plans 10 others. The 11 systems, when completed, will benefit 2,000 families.

### Electricity

Few forces can do more to upgrade rural living—its convenience, communication, and commerce—than electric power and adequate telephone service.

The 1,100 REA-financed rural electric systems now serve 5.7 million consumer units—or more than 20 million rural people. Their loan advances from REA exceed $5 billion. These are sound investments in the future of America. As of December 31, 1966, REA borrowers had paid back $2.6 billion in principal and

interest, including $275.4 million of principal paid in advance of due dates.

During calendar year 1966, REA approved 299 electric loan applications totaling $354.5 million to provide service to 202,108 new rural consumers as well as increased capacity to meet the energy needs of existing consumers.

Now that more than 98 percent of all farms are electrified, the task of reaching out to unserved areas becomes increasingly difficult. Nevertheless, REA borrowers continue to extend their lines to hard-to-reach areas, despite the handicaps of rugged terrain and low density.

In 1966, Valley Electric Cooperative, Las Vegas, Nevada, completed a 66-mile line to Gold Point and Lida at a cost of about $150,000 to serve only 15 consumers in a remote area. Benefiting from this four-miles-to-the-consumer extension are 3 ranches, 2 small businesses, a post office, and 9 rural residences. The cooperative also supplies energy from this line to a power company for resale to isolated consumers of Death Valley in eastern California.

REA, with other Federal agencies, began a study aimed at getting electric service to more than 30,000 Indians and Eskimos in 206 Alaskan villages.

Despite notable progress, rural people still pay more for their power than urban dwellers.

REA borrowers, however, are continuing their efforts to provide rural electric service comparable in quality and cost to urban service. During 1966, 103 borrowers reduced their electric rates, producing annual savings of about $2.8 million. Added to other rate reductions during the past 5 years, this cuts consumers' power bills by $18.1 million annually.

Seeking to achieve parity of rates and service, we have intensified our efforts to improve management and technology. Eight borrowers consolidated or merged their operations to take advantage of volume economies.

REA engineers prepared a complete set of standard drawings and specifications aimed at employing the latest technology in installing underground electric distribution facilities. We also emphasized the development and testing of distribution and transmission materials to substitute for copper, which is in scarce supply.

During 1966, we assisted borrowers in the development of plans to establish automatic data processing centers which may be able to provide even the smallest rural electric system with a total management analysis and information program. This, too, will improve service to rural consumers at lower cost.

### Telephones

The changing pattern of farm and rural living makes reliable telephone service increasingly necessary.

During calendar year 1966, REA received 245 loan applications totaling $198.7 million, the largest single year amount in

the 15-year history of the REA telephone program. On December 31, 1966, REA had 331 applications on hand totaling $258.7 million, a new high in both number and amount.

Loans actually made during the year amounted to $100.1 million, bringing the total loaned by REA since the program began to $1.3 billion. The new loans will provide initial or improved service to 75,634 subscribers. The number of borrowers increased in 1966 from 845 to 860, bringing to 1.8 million the total of farm and other rural subscribers served.

Like the electric borrowers, REA's telephone borrowers are making steady financial progress. By December 31, 1966, they had paid $251.1 million in interest and principal, including $11 million of principal paid ahead of schedule.

In the telephone program, as in the electric program, borrowers are striving to bring modern service to isolated areas. The Northeast Louisiana Telephone Company, Inc., at Collinston, for example, plans to construct approximately 13 miles of buried cable at a cost of $52,000 to provide 4-party service to 26 farm and other subscribers.

## COMPREHENSIVE RESOURCE DEVELOPMENT

If rural America is to attract an equitable share of the nation's industrial and business and service growth, it must improve and make wise use of its natural resources. In many parts of the United States this can be done only through area-wide or region-wide resource development.

Many rural communities, however, cannot by themselves marshal sufficient physical, human, and financial resources for satisfactory social and economic development.

### Resource Conservation and Development Projects

A partial answer to this difficulty may be found in the multicounty Resource Conservation and Development Projects authorized under the Food and Agriculture Act of 1962.

Twenty-six RC&D projects have now been approved for assistance in planning or operations. The first 10 pilot projects were approved in fiscal year 1965, the others during fiscal 1966.

Under the leadership of a Soil Conservation Service coordinator assigned to the project area, local sponsors first inventory the area's natural resources, then plan specific measures to develop the region's economy. This accomplished, the sponsors—soil and water conservation districts, county governing boards, municipal governments, conservancy districts, and similar bodies—coordinate all available assistance from Federal, State, and private sources to carry out project plans.

As of June 30, 1966, sponsors had activated more than 600 project measures, resulting in new jobs, new income, and new uses of rural resources.

In the Northern Rio Grande RC&D Project, embracing nearly 2.9 million acres in 4 counties of north-central New Mexico, measures carried

out in calendar year 1965 created 35,000 man-days of employment and increased income by $398,000.

The Duke City Lumber Production Mill at Espanola will employ a minimum of 35 men at the mill, plus at least 100 more for logging operations.

The Rancho de Chimayo recreation facility, in which a native Spanish restaurant and accessory features are already in operation, will, when completed, provide 30 man-years employment and an annual income of $100,000 in the small village of Chimayo.

The Northern Rio Grande Project is sponsored by the State of New Mexico, 4 counties, 3 municipalities, 4 Rural Areas Development Associations, 7 State agencies and commissions, the Northern Indian Pueblos Association, and 5 soil and water conservation districts.

The West Central Minnesota RC&D Project got off to a lively start in 1964 with a recreational enterprise on the Crow Wing River that immediately captured the public fancy and brought a swelling stream of customers to business establishments in Wadena and adjoining counties in the northern lake country.

The Crow Wing Canoe Trail played host to 3,000 canoeists on the river in its first summer of operation and to more than 5,000 in 1965. The Canoe Trail was soon supplemented by a Crow Wing Wilderness Saddle Trail, which permits riders to explore old logging roads through the pines and share camp grounds with canoeists on the river.

These were the first of 80 project measures—now swelled to 120—planned for a 5-county area. In just 2 years, more than a third of the measures in the original plan have either been completed or are in progress. They provided about 40 man-years of employment and increased local income by $136,000 in 1965. Additional measures are constantly being added. By 1970 they will be adding 80 man-years of employment and nearly a million dollars of gross income annually.

### ACP Special Projects

In nearly every State there are areas where the annual income of farm people is too low to permit them to carry out needed regional conservation measures, even with ACP cost-sharing on a 50-50 basis. Usually, it is in these areas that conservation needs are greatest.

To help meet this problem, States are authorized to establish special Agricultural Conservation Program community-wide projects in which ACP shares with farmers up to 80 percent of the cost of the conservation practices required. States may also allocate special funds for such projects in addition to the regular ACP allocation. This is a new concept in community-wide conservation assistance.

Although not limited to low-income areas or farms, most of these special projects are in such areas.

Johnson County in southern Illinois, commonly referred to as the "poorest county in the State," is typical. The county is an area of rough, relatively poor land. It has 652 farms, averaging about 195 acres. In 1964, the average farm was valued at $19,400.

Sales of all farm products averaged only $3,856 per farm in 1964, with more than two-thirds coming from the sale of beef and hogs. Over half the farmers in the county either work off the farm or are partially retired.

Johnson County badly needs conservation, particularly good vegetative cover and farm ponds to reduce soil erosion and flooding and make increased livestock production possible.

A special project was authorized in the "Little Cache" watershed in 1964, and a special ACP allocation of $150,000 was set aside to help farmers carry out needed practices. One hundred fifty farmers participated in the program.

They developed nearly 3,100 acres of pasture on 115 farms, planted 2,000 trees, and built 84 farm ponds for livestock water and erosion control. Critical areas were specially seeded on 26 farms.

Timber stand improvement practices were carried out, woodlands were fenced to keep out livestock, an erosion control dam was constructed, and a short drainage ditch dug.

Erosion and flooding have decreased, and farmers in the county are rapidly developing a stable and profitable livestock economy.

Low-income farmers of Spanish and Indian descent in northern New Mexico and southern Colorado are pooling their resources and using conservative ACP special projects to develop water conservation systems.

Farmers in the Cabresto Lake Acequia (community water system) of Taos County, N. Mex., completed 4,000 feet of concrete-lined ditch in 1964 at a cost of $15,000. The ACP and the State of New Mexico paid 85 percent of the cost. That was one project. In 1965 work was started on a diversion dam, plus a 16-inch pipeline over a rocky hillside to divert water from one ditch to another. This cost another $15,000. The 1966 project, at a similar cost, involves laying 750 feet of 12-inch pipeline, building a 265-foot flume across the Cabresto River, and putting in 2,000 feet of concrete ditch lining plus turn-out valves, diversion boxes, and other facilities for efficient handling of water on individual farms.

Even in such "bite-size" chunks, cash money is hard to come by for these farmers. In 1966 they borrowed $10,000 on a 20-year loan at 2½ percent from the Interstate Stream Commission in Santa Fe. But they are pushing forward.

Marcelino Martinez, Mayor of Questa in Taos County, says, "The people feel it is a great benefit, especially for the future. They are assured of getting water as the ditch improves. They feel encouraged to farm and raise more crops and stock."

It is estimated that New Mexico alone has more than 1,500 community water systems serving thousands of farmers on very small acreages. Because of their low level of income these farmers must continue to meet their community-wide conservation problems little by little.

We are exploring a similar approach to the resource problems of Indians in the four-corner area of Arizona, New Mexico, Colorado, and Utah.

### Service to Appalachia

Effective aid to the 17 million people living in the Appalachia region depends in part on better use of soil and water resources.

We are providing intensified assistance to the area through the Appalachian Land Stabilization and Conservation Program. Under this program in fiscal 1966, SCS gave technical help to about 13,000 farmers. Of these, 3,160 became new soil conserva-

tion district cooperators. Complete soil and water conservation plans were developed for 3,553 cooperators.

During the year, 13 new watersheds in the Appalachian region were authorized for planning and 15 others approved for installation of land treatment and structural measures. This brought the total of operating watershed projects in Appalachia to 83, in addition to 22 already completed.

Our soil scientists and agricultural engineers are continuously researching the problem of providing more clean water for agricultural, recreational, and industrial use in Appalachian communities. We are also studying the best ways to revitalize subsoils laid bare by erosion, strip mining, or urban development, and how best to improve vegetative cover in such areas.

We published in fiscal 1966 the first two of a series of ARS leaflets to aid Appalachia's subsistence farmers. Using the "Victory Garden" approach of World War II, these publications are helping low-income families improve their diets and health by increased home production of milk, meat, eggs, and vegetables.

### Soil Conservation Districts Broaden Their Objectives

Less spectacular than the special community development projects just described, but extremely effective in continuous, constructive influence is the soil and water conservation carried on by conservation districts throughout the nation.

By the close of 1966, four out of five of the nation's 2,995 soil and water conservation districts had revised and broadened their long-range programs to promote economic development. They now give special attention to recreation, fish and wildlife, beautification, forestry, watershed projects, water supply, and land use changes in rapidly developing rural fringe areas.

What effect they can have on the future shape of rural America is perhaps best indicated by the way they have helped mold communities in the past.

> The economy of Webster Parish, La., for example, has shifted from dependence on a declining cotton industry to a complex of thriving livestock and timber enterprises.
>
> When the Brushy-Cooley Soil Conservation Demonstration Project was established in 1934, Webster Parish had 37,310 acres in cotton. Sheet erosion was scalping the topsoil from clean-tilled fields and gullies were carving the land into units impractical for farming.
>
> In 1938 the Dorcheat Soil and Water Conservation District took over the work of the Federal project and gradually extended conservation measures and good land use throughout the parish.
>
> Today 2,210 acres of cotton grow on stable and productive soils protected by conservation practices. Grass and trees have replaced 35,000 acres of discontinued cotton. Livestock eat the grass and pulp mills consume the trees.
>
> In 1934 not enough beef was sold in Webster Parish even to be reported. In 1960, the income from beef was $400,000; today it is about a million dollars. Three packing plants employ 165 people and do a $6½ million business annually. A milk processing plant employs 56 people.
>
> A large paper mill employs 1,950 people and uses 2,200 cords of pulpwood a day. The largest of 4 lumber mills in the parish hires nearly 300 local people and sells 30 million board feet of lumber a year.

## COMMUNITY RECREATION AND BEAUTIFICATION

We have seen that recreation is a "crop," now being harvested by thousands of farmers. It is also an asset of rural communities and a growing number are profiting by it.

Communities that can boast a new swimming pool, an attractive public park, a golf course or other such recreation facilities have a very important asset in space-age competition to attract new business and industry, to hold their young people and to increase property values.

During the past 4 years USDA credit, technical aid, and cost-sharing for construction of well planned, community-backed outdoor recreation centers has proved to be one of America's most effective rural areas development tools.

Experience made possible by this 4-year-old supervised credit program has revealed that when recreation opportunities are present, rural communities become more attractive for family living. And new home construction, and other community developments usually follow.

In the past 5 years, FHA has advanced nearly $38.2 million in credit to 314 nonprofit associations to finance development of swimming pools, play parks, small golf courses, picnic grounds, and lakes for swimming, boating and fishing.

During 1966 alone, FHA advanced $17 million to 140 nonprofit associations in 38 States to finance large-scale community recreation projects.

All State Extension Services are pushing outdoor recreation as an important rural asset. Fourteen State Extension Services have appointed full-time recreation specialists. Other Services have given their foresters, wildlife specialists, conservationists, and economists recreation education as an added duty.

Generally, the activities include preparation and distribution of educational publications, seminars for persons operating outdoor recreational facilities, and assistance to individuals planning or operating recreational enterprises. About 40 States have prepared and issued educational publications about the establishment and operation of recreation facilities and programs.

One recreation project that was about to fail has apparently been saved through the resource development efforts of the Cooperative Extension Service in Pearl River County, Mississippi.

> The city of Poplarville deeded 13 acres to citizens for developing a community center. In order to obtain a Farmers Home Administration loan of $37,000, the project organization had to consist of 120 families, each paying a monthly $2 membership fee. Officers of the organization were able to obtain only 61 members, and they turned to Extension for help.
>
> The county agent, with assistance from resource development specialists at Mississippi State University, brought membership up to the necessary level. Extension specialists also helped charter the organization as the Raine Street Recreational Center, and will continue to advise the officers in developing the center.

Our recreation-minded people spend hundreds of millions of dollars in rural regions for gasoline, food, and lodging; for photographic, camping, and hunting expenses; for guides, professional services, and renting boats and horses. A recent survey showed that hunters and fishermen spent $6 per person a day. Winter sports enthusiasts pay more—overnight skiers, for example, spending $24 to $52 a day.

Such tourist spending means prosperity for many rural communities.

> The little town of Warren, Vt., has taken a new lease on life since 1960 as a result of recreation developments on the Green Mountain National Forest. The Sugarbush Ski Area alone is used by 215,000 skiers. Other year-round recreation developments that followed the ski area have brought Warren 4 new restaurants, 2 gas stations, and 12 hotels, motels, and guest houses with 3,000 beds.

A recreation project in Sagadahoc County, Me., offers a fine example of agency cooperation. Day's Ferry is a small community of about 40 families, many in very low-income brackets. For the first time the 200 people in the community now have water recreational facilities.

A 4½ acre pond was built this year on the farm of John Chapman. It provides a place to fish, skate, slide, ski, boat, and picnic. A side benefit to the community is fire protection where none previously existed.

The total cost of the project was about $2,500. About $500 was paid by the farm owner, the rest through ACP cost-share. There is no charge for use of the facilities on the pond.

ACP provided cost-share assistance, the Androscoggin Valley Soil and Water Conservation District and the Soil Conservation Service developed the plan and gave technical assistance and supervised construction. The State Forest Service supervises improvement of the woodland bordering the pond site. Fish were furnished by the U.S. Fish and Wildlife Service. The Day's Ferry Community Club supervises the area and the Inland Fisheries and Game Commission assists in management of the pond.

### "Let the Country Sing With Beauty"

"Beauty as we feel it, is something indescribable," George Santayana once said. "What it is or what it means can never be said."

Indescribable or not, beauty is rich and warm and vital and real. Without it, the world we know would be a barren waste, inhabited by barren souls.

One of the truly exciting things happening in America today is a happy rebirth of concern for beauty.

Every day now, from one end of the country to another, the truism that ugliness *does* offend and beauty *does* reward is being proved. And we are discovering in the process that beauty rewards in more ways than the esthetic. In this new national

awareness, this renewed appreciation and strengthened desire for the things that are beautiful, there is, implicit, a new and higher national morality.

### Intensified Efforts

In the past few years the USDA has intensified its efforts to promote and carry out national beautification through its research programs, its financial and technical assistance activities, and its educational work done by the Federal-State Cooperative Extension Service.

Through international exchange and direct exploration, the USDA collected more than 700 new ornamentals in the past year. These were distributed to Federal and State research stations, for trial.

In May 1966 the First Lady planted a new type of ornamental shade tree on the grounds of USDA's Administration Building. Found by USDA plant explorers in China, this tree, the Bradford pear, has been adapted to climates in this country. Today it is available to commercial nurseries in at least 15 States as a "perfect" shade tree for city planting.

This combination of public and private effort nationally, statewide, and in localities is getting results everywhere around the country.

4-H delegates from 44 States and Puerto Rico joined representatives of other youth groups in the National Youth Conference on Natural Beauty and Conservation last June in Washington. They represented the 100,000 4-H members carrying home beautification projects and the many more who help beautify their communities.

In Arkansas, an Extension Homemakers Club plowed under an old junkyard that marred a scenic turn-off to a vacation area and planted the site with flowers, shrubs, and trees.

In Georgia, 2,000 local groups got together to plant more than 700,000 trees and shrubs during Make Georgia Beautiful Month. Interest was sparked by 20 television shows, 75 radio programs, 216 newspaper articles, and 418 educational meetings. 4-H Club members cleaned up 130 miles of highway, and 65 counties organized beautification committees.

In Illinois, the Extension Service produced 13 half-hour TV programs on home landscaping that were later shown in three other States.

In Virginia, the Arlington Home Demonstration Club learned through the Nurserymen's Association that a nurseryman in California had a surplus supply of crepe myrtle trees. Arrangements were made to buy the entire lot, 600 trees, at a bargain price. The club arranged for the sale and distribution of the trees, and the county agent printed planting instructions.

The project was so successful that the Beautification Committee of Arlington contracted to have 6,000 crepe myrtles especially grown for sale in Arlington in the spring of 1967. Within a few years, those 6,000 new trees will make an exotically colorful contribution to beautification. They will indeed be a welcome sight in August, blooming as other plants wilt in the heat of summer.

On another plane, USDA technical assistance has been redirected to provide greater emphasis on natural values. On hundreds of watershed recreation projects, for instance, local

sponsors are now required to include landscaping and beautification in their proposals.

Working with telephone industry manufacturers, REA has developed techniques that make it less expensive to put telephone lines underground rather than mar the natural landscape with unsightly poles and lines. And we are now working to lower the cost of burying electric distribution lines for the same esthetic advantage.

Beauty can be a major factor in building in rural America the communities of tomorrow that we need to ease the population pressures of our big cities—communities with good jobs, good schools and medical centers, and their own full-range of public facilities, cultural and entertainment opportunities.

Beautification, recreation, industrial development, improved public facilities and community services are all part-and-parcel of the right kind of community development package.

> Duplin County, N. Car., to give one final example, demonstrates what can be done. In that county, USDA loaned local people $138,000 to develop a golf course, swimming pool, picnic area, tennis court and clubhouse in order to beautify the area and provide more recreational opportunity.
>
> It did this . . . and it did more. It attracted two industries which now provide jobs for 450 people and pump tens of thousands of dollars into the Duplin County economy each year. Few leave Duplin County any more because they can't get a job.

Thus we have begun to restore beauty to our land, beauty to our lives, and a new dimension to our communities.

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For the well-being of the whole of the Nation—urban and rural—one of the greatest contributions our generation can render is to make it possible for people to live rich and rewarding lives where the space is—in the countryside.

That space must, of course, be equipped with adequate educational and health services, water distribution and sanitation systems, facilities for job training, social services.

And it must be marked by more industries, more businesses, more service institutions—because to live successfully in rural America, men and women must be able to work there.

Perhaps the simplest way to describe our task is to say that it consists of rebuilding the gates of rural America so they open *in* as well as *out*.

This we can do. And the doing will be filled with excitement and challenge.

Already parity of opportunity is becoming a visible fact of life in many, many rural communities.

## THE THIRD CHALLENGE: A WORLD FREE FROM HUNGER

"Now all you gentlemen who wish to lead us,
To teach us to resist from mortal sin,
Your prior obligation is to feed us,
When we've had our lunch, your preaching can begin."

Bertold Brecht in *ThreePenny Opera*

The greatest challenge of our age, next to the banishment of nuclear war, is to remove widespread hunger from the earth in our time.

If we fail, ahead may lie global catastrophe.

But if we win, our era can be immortalized as the Age of the End of Hunger.

The United Nations estimates that world population in 1900 was about 1.6 billion. Since then, largely due to disease control, world population has doubled. It is now estimated at well over 3 billion. If current trends persist, another billion could be added within a fairly short time.

Most of this growth is occurring in the food-short developing countries of Asia, Africa, and Latin America. It is currently estimated that by 1970, 2.5 billion people will live in the less-developed countries. About 800 million, nearly one-third, will be in Communist Asia. Some 550 million, over one-fifth, will be in India.

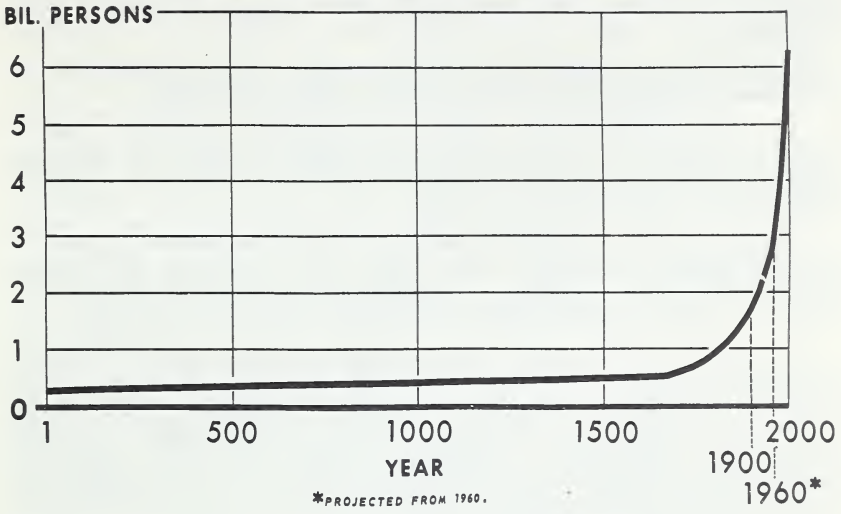
Despite the rapid population growth, per capita world agricultural production followed an upward trend until 1965.

Even in the less-developed countries per capita food production rose slightly through 1964. The net gain since the late 1930's was about one-third of 1 percent per year—or about 8 percent for the entire period. Since 1964 some of this gain has been wiped out.

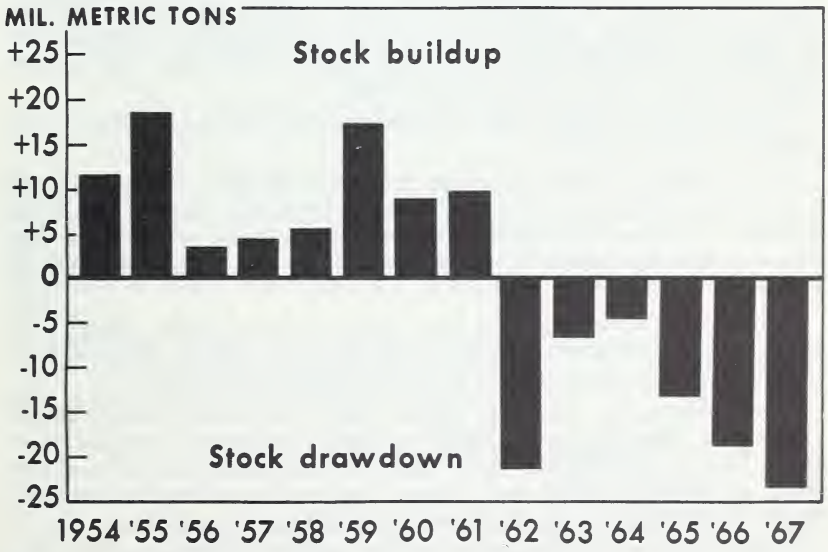
From 1954 to 1964 the less-developed countries, excluding Communist China, continued to forge ahead slowly in per capita food production. In 1965 and 1966, however, population outstripped production increases. The Far East showed a considerable rise in per capita output from 1956 to 1964, but a sizable drop since. Per capita food production in Latin America rose substantially until 1965 but dropped in 1966. In Africa and the Middle East, food output has advanced at about the same rate as population. For the developed countries, per capita agricultural production in 1966 was estimated to be 10 percent above the 1957–59 average. For the less-developed countries, per capita output was estimated at only 1 percent above 1957–59.

Grave anxiety over the world food situation has now become widespread. There are many reasons for this, among them: increased per capita demand for food; declining world carryovers of wheat and rice; a succession of poor crops in many of the Communist countries, along with a severe drought in India in

## TWENTY CENTURIES OF WORLD POPULATION GROWTH




## CHANGES IN WORLD GRAIN STOCKS



1965 and 1966; a new awareness that hunger and economic deprivation constitute a threat to world peace and stability; and the increasing pace of population growth in some developing regions, thus adding to present and future pressure against food supplies.

Increased per capita demand has made food *consumption* in the less-developed countries rise faster than *production*.

In India, for example, prior to the 1965 drought, the rise in food production was greater than population growth. Between 1948 and 1962, the annual compound rate of increase in India's crop output averaged 2.7 percent.

But per capita income at constant prices rose about 20 percent in the decade preceding 1964. While still very low, this larger income led to a significant increase in per capita demand for food. Per capita income fell in 1965 and perhaps also in 1966.

To meet the demands of more people—and people with more income—India and the less-developed countries in general have become importers, instead of exporters, of grain. In 1934–38 the net grain *exports* of the Free World less-developed countries (excluding Argentina) averaged 5 million metric tons annually. In the year 1965–66, the net grain *imports* of these regions totaled about 28 million tons.

This has changed North America from a moderate grain exporter to the world's foremost grain merchant.

Some 30 years ago, the United States and Canada annually exported about 5 million metric tons of grain, net. In 1966 they exported 12 times as much—60 million tons out of a world total of about 70 million tons. No single region has ever before provided so much of the world grain trade.

There has also been a sharp reduction in world carryover supplies of wheat and rice.

With wheat exports soaring, carryover stocks of wheat in the major exporting countries fell from a burdensome and price-depressing total of nearly 59 million metric tons in 1961 to less than 31 million metric tons in 1966. They may fall to about 25 million in 1967.

World carryover of rice has dropped even more steeply. In 1955, rice carryover in major exporting countries was 1.8 million metric tons. In 1965 it was less than 300,000 tons.

The collapse of China's Great Leap Forward, the frequent failures of Russia (up to 1966) and the Communist countries of East Europe to achieve their agricultural goals, and the sharp drop in India's grain crop caused by severe drought have focused international attention on the world food problem.

Despite their slowly increasing per capita food production and their sharply rising imports, people in the less-developed countries have average diets far inferior to those in developed regions. This constitutes an increasing threat to world peace and stability.

World Bank data class the nations of the world into four groups—rich, middle income, poor, and very poor. Among the 27 rich countries of the world—where average per capita income is $750 or more per year—there has been only one major internal upheaval since 1958. Among the 38 very poor nations—with average per capita incomes of $100 or less a year—32 have experienced significant outbreaks since 1958. In fact, they have averaged two major outbreaks per country over that period.

New methods of communication—and transportation—have shrunk the world. Those who have little can look over the shoulders of those who have much. And those who have little want to earn their place at the table of plenty.

Finally, the prospect of a population rise of another billion in the fairly near future has caused the world to recognize that to produce enough food to meet future demands constitutes a massive challenge.

The average diet in the developing regions is by no means up to accepted standards of minimum adequate nutrition. It suffers both in quantity and in quality of food. It is estimated that in regions containing about 60 percent of the world's people the average diet is short on calories. The average diet in regions where between 50 and 60 percent of the world's people live is short on protein—a prime measure of food quality—and in regions where a good 50 percent live, the diet is low in fat.

There is need to increase food *quantity*—calories—and an equal need to raise food *quality*—proteins.

The USDA is deeply involved in helping to meet the world food-people challenge. In its broadest aspects, the challenge involves not only the developing nations but the developed regions as well. The emerging countries want more and better food to wipe out hunger and malnutrition. They seek to reach the minimum levels of adequate nutrition necessary to prevent nutritional diseases and to lay the foundation for improved health and increased vigor. The developed nations, on the other hand, are intent on upgrading their average diets as a prime factor in achieving higher standards of living. Neither objective can be attained without immense and increasing reliance on the United States.

American agriculture and the USDA, consequently, were more actively involved in international trade and the development of world agriculture in 1966 than ever before.

## EXPORTS TODAY AND TOMORROW

U.S. agricultural exports, continuing their spectacular gains of the past decade, accounted for more than one-fifth of world agricultural trade in fiscal 1966. Such exports for the fiscal year totaled $6.7 billion—nearly half a billion dollars more than the year before. The portion sold commercially for dollars reached a new high of $5.1 billion—almost $700 million more than in fiscal 1965—and more than double the 1954–57 average. Exports of

wheat, feed grains, and oilseeds and products each exceeded $1 billion in value.

About one-sixth of our total farm output now goes abroad, compared with about one-tenth during 1952–54. With demand for food rising rapidly abroad, exports have become our fastest growing outlet for U.S. farm products and they probably will take an increasing share of U.S. farm output during the rest of this decade.

In fiscal 1966, about three-fourths ($5.1 billion) of our agricultural exports were commercial dollar sales and three-fourths of these sales were made to developed countries. For soybeans and corn, prices are fully competitive in world markets and our commercial exports need no assistance from the government. However, for wheat, rice, and cotton—with domestic prices higher than world prices—export subsidies in cash, payments-in-kind, or sales from government stocks below domestic market prices were necessary in 1966 to make them competitive in world trade. Of the total commercial market, about one-fourth received export payment assistance. Under the Food and Agriculture Act of 1965, price support of cotton, beginning with the 1966 crop, will approach world price levels and export payments will be sharply reduced for this commodity.

Japan, Canada, and Western Europe are our most important export markets. In fiscal 1966, sales to Japan were valued at $0.9 billion, to Canada at $0.9 billion, and to Western Europe at $2.7 billion—of which $1.6 billion went to EEC countries. Practically all of these exports were for dollars. These markets should continue to be good outlets in the next decade. We expect the commercial market to be over $6 billion by 1970, with Japan the leading single market at a level of $1.4 billion. Exports to West Europe should rise to about $3.2 billion. Our total farm exports in 1970 should be at least $8 billion.

The demand for imports in less-developed nations is limited by low incomes and shortage of foreign exchange. Concessional trade involves liberal financial arrangements or outright donations. Exports under P.L. 480 include sales for foreign currency, donations, barter, and long-term dollar credit sales. We expect these exports to show some increase in the rest of this decade—from $1.6 billion now to $2.1 billion in 1970.

The mix of agricultural exports has changed in the past 15 years. In the 1940's and early 1950's, cotton was the leading dollar earner in the agricultural export market. However, increased competition from synthetics and from cotton in other producing areas drove the value of our cotton exports down from $0.9 billion in the early 1950's to $0.4 billion in fiscal 1966. Under the new cotton program for the 1966–69 crops, we expect to recover some of the lost market and exports may exceed $0.7 billion in 1970.

Wheat has been our leading export commodity in recent years, reflecting the increase in exports under P.L. 480. About 67 per-

cent of the wheat exported in fiscal 1966 was on concessional terms. Wheat exports, valued at $1.3 billion in 1966, are expected to reach $1.5 billion in 1970.

The most phenomenal export story has been written by feed grains and soybeans and soybean products. Exports of feed grains, feeds and products increased from $0.3 billion in 1949–51 to $1.7 billion in fiscal 1966. We anticipate feed grain exports of $1.8 billion in 1970, which would make this commodity group the nation's leading export. Shipments of soybeans and products rose from $0.2 billion in 1949–51 to $1.1 billion in fiscal 1966. We expect an increase to $1.6 billion in 1970.

### Balance of Payments Helped

Export earnings by American agriculture continued to make a major contribution to the nation's balance of payments. Farm products now make up about one-fourth of total U.S. exports.

Between calendar years 1960 and 1965, $23.6 billion of our farm products moved abroad in cash sales for dollars. This return offset the same amount of dollars flowing outward from the U.S. in payments for merchandise imports, services, foreign investments, tourism, and military and economic aid.

In addition, during 1960–65, a total of $1.4 billion in balance of payments help was derived from agricultural products exported under Public Law 480. The government was able to avoid heavy outlays of dollars by using foreign currencies generated under the P.L. 480 program to pay embassy expenses, military obligations, and expenses for agricultural market development. Savings in outlay of dollars also resulted from the barter of U.S. food and fiber for goods and services—as well as from repayment of loans and interest in dollars under the long-term credit program.

Thus the contribution of agricultural exports to the U.S. balance of payments between 1960 and 1965 amounted to $25 billion. Calendar year 1966—with agricultural exports estimated at $6.9 billion—added about $5½ billion more in balance of payments help, bringing the 7-year total to more than $30 billion.

### Market Development

One of the most important factors in the phenomenal growth of our agricultural exports has been an active foreign market development program sponsored by our Foreign Agricultural Service and carried out in cooperation with private industry.

Here are some of the market developing highlights of fiscal 1966:

*Education Helps Boost Feed Grain Exports:* Educational work with the foreign grain trade and with animal nutritionists, showing the value and practicality of U.S. feed grains in building an improved livestock industry, is helping bring huge increases in feed grain exports. Education was a major factor in doubling feed grain exports to Spain from 1965 to 1966 and a

West Berliners buy fresh cuts of U.S. beef.

West Berliners eat a lunch based around U.S. beef.

200-fold increase in shipments to Portugal. A technical education program is helping to bring a shift in Germany from root crops to feed grains.

*France Shows Interest in More Livestock Feeding:* A visit by French officials to study U.S. livestock feeding methods could enhance our export market possibilities. If France greatly expands meat production by feeding more of its own grain, larger markets would be available elsewhere for our producers of grains.

*Swiss Government Now Buying U.S. Wheat:* Persistent efforts by the U.S. trade and the agricultural attache helped convince the Swiss of the merits of our wheat and resulted in a 20,000-ton purchase for the Federal Emergency Stockpile Program.

*Spain Becomes Major Crusher of U.S. Soybeans:* The market for U.S. soybeans and soybean meal in Spain more than doubled in the past year, aided by continued promotion at consumer, producer, and trade levels. Seven newly installed crushing plants with an estimated annual capacity of around 26 million bushels are now operating in Spain.

*Tallow Exports at High Level:* Stimulated by overseas promotion of tallow for use in soap and livestock feed, tallow exports reached an all-time high.

*Japan Nears Billion Dollar Mark as U.S. Farm Market:* Japan continued to lead all other nations among our agricultural customers in 1966 and will soon be a $1 billion annual market. Soybean exports to Japan reached a new high, largely due to educational and promotional projects to increase the use of soybean meal in Japanese livestock feeds.

*Leisure Wear Promotion Helps Cotton Exports:* Increased leisure opens up one of the most promising new market opportunities in Europe for textiles made from cotton. The world's cotton exporters have built a successful promotional campaign around the value of cotton for producing leisure wear.

*Turkey Exports Continue Rapid Expansion:* Paced by strong industry promotion, turkey exports continued their rapid growth, particularly to Germany and Italy. Major emphasis is being placed on turkey both as a festive bird for special occasions and on greater use by the institutional trade year-around.

*Export Gains for Breeding Cattle:* Exports of U.S. beef and dairy breeding cattle are continuing to set new records, assisted in large part by activities of U.S. breed associations cooperating in the market development program.

*Horticultural Exports at New High:* Record exports of fruits and vegetables were stimulated by market development activities abroad and were accomplished despite limited supplies of some traditionally leading items, such as canned peaches and fruit cocktail.

*More Sales Through In-Store Promotions:* In-store promotions of U.S. processed foods were held during the year in several major European cities. At a promotion in Manchester, England,

more than half of the 420 participating stores submitted reports showing an average increase of 235 precent in sales of U.S. products compared to the period immediately preceding the special promotion.

*Greater Participation by State Agencies:* Increased activity by U.S. State governments marked another important development in market promotion. Seven States had booths at a USDA-sponsored international trade exhibit in Munich, Germany, and reported encouraging results. More than half the States sent representatives to a Washington conference later in the year to discuss ways of promoting export growth.

### Trade Liberalization

Working in close cooperation with Office of the Special Representative for Trade Negotiation and the Department of State, we continued our vigorous efforts to eliminate or reduce trade barriers against U.S. agricultural products. Agricultural attaches stationed in 59 countries participated actively in promoting liberalized trade.

These efforts saw both successes and disappointments.

During the year, Brazil, Canada, France, New Zealand, Norway, the United Kingdom, and West Germany relaxed import restrictions against some U.S. agricultural commodities.

Trade negotiations with the European Common Market, on the other hand, brought many problems and frustration.

At Brussels, the Council of Ministers of the European Economic Community raised to over 90 percent the proportion of the Community's farm production that is now under a common agricultural policy (CAP), especially favoring its own farmers.

Free movement of EEC-produced farm products within the EEC at common price levels began November 1, 1966, for olive oil. Free movement was scheduled January 1, 1967, for the main fruits and vegetables; July 1, 1967, for grains, pork, poultry, eggs, and oilseeds; September 1, 1967, for rice; April 1, 1968, for dairy products; and July 1, 1968, for sugar. While common beef prices take effect April 1, 1968, the Council still must decide, by July 1, 1967, how to remove the remaining duties and restrictions on internal trade in beef and on certain other commodities so that free movement can begin then.

The United States has a big stake in the shape taken by the EEC's common agricultural policy. U.S. agricultural exports to the EEC totaled $1.5 billion in calendar year 1965. Of that trade, CAP regulations now cover $1.1 billion, including about $350 million of duty-free products, principally oilseeds and oilcake. The variable levy system now applies to about $640 million of U.S. exports to the EEC.

Only when all EEC-produced farm products can move freely within the Community and common price levels become operative will the full effect of the CAP be felt on production and trade. That effect on our sales is almost sure to be adverse. The

common agricultural policy tends to protect inefficient producers. It aims to permit, if not to stimulate, greater production through price incentives that, in some cases at least, imply an increase in consumer prices. It also seeks to insulate the system against outside prices by raising import prices through levies up to or above the EEC prices, and by exporting any surpluses through the use of subsidies, if necessary. Thus, incentives to greater efficiency largely take the form of aid for structural improvements to agriculture as a whole.

> Farm support prices of wheat, for example, average much lower in exporting countries such as Argentina, Australia, Canada, and the United States than they do in importing countries such as Belgium, the Netherlands, and West Germany. With some exceptions, price support levels for grains are lower in the less developed countries of Asia and Latin America than they are in Western Europe and Japan.

It seems highly likely that, for many products, "third" countries such as the United States will be permitted to compete for only that part of the EEC market that cannot be supplied by domestic production. And for some products, such as tobacco, raisins, and vegetable oils, the EEC's special trading arrangements with its associated States—Greece and Turkey, and its former African colonies—will give them a preferred position.

At Geneva, Kennedy Round trade discussions on agriculture made little progress.

This stemmed in large part from the EEC's delay in making trade offers until its internal policy was substantially agreed upon. Not until late in July 1966 were agricultural offers made by the Community—and it was at about the same time that other major participants firmed up their agricultural offers to the EEC.

At year-end, U.S. negotiators were engaged in intensive multilateral and bilateral talks with respect to the offers.

The Kennedy Round talks are of vital importance to American agriculture and to the overall U.S. economy. More than that, the willingness of all trading partners, including the EEC, to work out agreements leading to liberalized trade will have a great bearing on living standards of many millions of people not only at home but also abroad in the years ahead.

### Food Assistance

During fiscal year 1966, U.S. exports of farm products under the various programs authorized by Public Law 480 amounted to about $1.6 billion, slightly below the total of the previous year despite increased P.L. 480 shipments to India.

We intensified our efforts to shift sales from foreign currency to long-term dollar credit and many former foreign currency customers made long-term dollar credit purchases for the first time in 1966. Such customers included Afghanistan, Algeria, Brazil, Congo, Indonesia, Israel, Jordan, Morocco, the Philippines, Tanzania, Uganda, and the United Arab Republic.

U.S. food provides lunches for children in India . . .

and for these children in day nursery, Bogota, Colombia.

The barter program continued to emphasize the exchange of agricultural commodities for foreign goods and services required by various U.S. government agencies. During fiscal 1966, barter contracted for goods and services worth $60.5 million for the Agency for International Development and $144.6 million for the Department of Defense.

Drought-stricken India was the largest recipient of U.S. food aid under Public Law 480 during 1966. Emergency shipments of U.S. wheat and other grain played a major role in averting starvation in that nation of approximately one-half billion people.

Our food supplies, furnished on a crash basis, filled the critical gap left when widespread drought in India during the latter part of 1965 cut the grain harvest 17 million metric tons below the 89 million tons harvested the preceding year. Drought conditions existed in certain areas of India also in 1966.

> Our emergency food aid program to India was the largest operation of its kind in history. During calendar year 1966 about 8.2 million metric tons of U.S. food grain was sent to India. Such a quantity of grain would fill 156,000 boxcars—equivalent to a solid train of grain stretching from Kansas City to San Francisco. The largest peacetime armada ever assembled—600 ships—was required to move the grain. This food supported 60 million Indian people.

The crash program got under way in January 1966 after it became apparent that India's crop failure was of disaster proportions. Experts from several U.S. Government agencies made an on-the-spot study of India's requirements and logistical problems in January, and determined her needs for 1966 as 11 million metric tons, of which the United States agreed to supply 8.6 million.

After visiting India's major seaports, our experts concluded that 1.2 million tons of grain and other bulk cargo could be handled in the dry months of April and May, offsetting the smaller volumes the ports could accommodate in the monsoon months of June, July, and August. It was determined that inland distribution facilities and procedures also were adequate to handle the grain shipments.

Large tankers of up to 100,000-ton capacity were used to a considerable extent to speed up grain movement and facilitate unloading. The use of pneumatic grain handling equipment was expanded, with the assistance of industry representatives, to improve the rate of discharge. In some cases grain was off-loaded at sea from tankers to smaller ships, which were then unloaded at a number of local ports. Grain specialists under the leadership of the U.S. Feed Grains Council and Western Wheat Associates—commodity organizations cooperating with USDA in export market promotion—provided advice and guidance to Indian officials responsible for receiving, transporting, and storing the grain. A home economist helped Indian home science staffs introduce consumers to U.S. milo, which has a different taste from Indian sorghum grain.

The fact that widespread starvation was avoided in India in 1966 must be largely credited to the more than 11 million metric tons of food grains imported during the calendar year—in large part from the United States, but also from Canada, Australia, and other nations.

The lessons learned in the Indian crisis should help in coping with any future emergencies. Aside from the emergency aspect, the year's experience should make for improved use of limited port facilities and increased utilization of large tankers, which have proved to be efficient and economical for shipping grain. We know now that concerted efforts, if undertaken in time, can replace shortages caused by crop failure. But above all, the crisis has highlighted the need for India and other food-deficit countries to strengthen their own agricultures.

### New Food Aid Program

With surpluses largely eliminated, except for cotton and tobacco, the extension of Public Law 480 enacted November 12, 1966, embodies a new approach to international food aid. It provides for the shipment of food aid commodities that are "available," rather than those that are "surplus." This provision contemplates that the nation's reserve acreage will be returned to production as needed—to produce for U.S. use, commercial exports, and food assistance to nations in need.

Among other major new features of the law, which will be tested in action for the first time in 1967, are these:

1. To qualify, developing countries must be trying conscientiously—through self-help—to provide more of their own food from their own resources and their own efforts. Where countries show willingness to give high priority to food production improvement, the U.S. will reinforce such self-help efforts with food aid, and technical and scientific support.

2. Countries now buying with local currencies must seek to convert to buying with dollars, or with dollar credits, by the end of 1971.

3. Additional stress will be placed, especially in donation programs, on foods for children that will meet requirements of proteins, minerals, and vitamins.

4. Use of foreign currencies from export sales to support programs of family planning is authorized on a request basis.

5. As many countries as possible must contribute to international food and agricultural assistance programs.

## IMPROVING AGRICULTURE WORLDWIDE

USDA involvement in international agricultural technical assistance and training programs for less developed countries is rapidly expanding, year-end fiscal 1966 figures show. These programs are sponsored by the Agency for International Development.

### Providing Technical Guidance

During fiscal 1966, 337 USDA technicians worked in 39 countries—compared with 194 technicians in 26 countries in 1965. There were 23 long-term resident USDA teams in developing countries—compared with 13 in fiscal 1965. Nineteen USDA agencies participated in technical assistance programs—compared with 15 in 1965. And, the number of international agricultural development projects was 84. There were 46 in fiscal 1965.

Training of foreign nationals also increased. During the 1966 fiscal year, 2,187 AID-sponsored foreign nationals studied agriculture under training programs arranged by the International Agricultural Development Service. This was the largest number of trainees for one year in more than 20 years of USDA international training programs—more than double that of 10 years ago and up 35 percent over five years ago. About 350 private companies and institutions cooperated with USDA and the land-grant universities in training these people from less developed countries.

Department of Agriculture specialists, working with local scientists, educators, and agricultural technicians, are helping to build strong agricultural institutions such as credit cooperatives, extension services, research stations, and other organizations necessary for modern farming. At the same time, USDA is arranging training in the United States for foreign agriculturists who will be the future leaders and administrators of these newly developing institutions in their home countries.

The oldest USDA/AID team has been working in *El Salvador* since late 1963. Better seed varieties are being used, 2,000 farmers have been resettled on their own farms and a marketing cooperative has been organized.

As a result of three years' labor, the USDA team has helped set up 18 new agricultural extension field offices in fiscal 1966, bringing the total to 50. Now the specialists are working to improve extension techniques and are involved in research, land reform, agricultural credit, marketing, and vocational agriculture.

A recent development of the team is introduction of techniques to eradicate the *Atta Mexicana* ant, which had ruined El Salvadoran crops for generations. Local farmers are benefiting from a chemical produced in the U.S. and tested by an El Salvadoran entomologist. The cost to farmers of eradicating this pest is only six cents per ant colony.

Another USDA/AID team is in *Brazil.* The first specific success of this 24-man team is a farm market news service, a joint project of the Brazilian and U.S. governments, which is helping raise farm incomes and lower marketing costs in Brazil. Inaugurated in 1966, the news service gives up-to-the-minute price and supply news about fruits, vegetables, grain, poultry, and eggs. It will encourage increased food production by helping farmers de-

Training South Vietnamese agricultural Extension agents.

Home demonstration agent shows proper use of U.S. foods.

cide how much and what kind of crops to grow, and where and when to sell their products. And it will help buyers find farm products at reasonable prices.

Soil scientists on the USDA team are assisting the Brazilian government in locating 75 million acres of land suitable for settlement and development in the western two-thirds of that country. When completed, the survey will help the government select sites for future villages where settlers from over-populated sections will have a reasonable chance to succeed in agricultural and industrial development. Other USDA specialists in Brazil are working on marketing cooperatives, farm credit, and price incentive policies to stimulate farm production.

### Aid to Vietnam

We are cooperating with the Agency for International Development in supporting the "second front" in Vietnam. A Presidential Mission visited Vietnam in early 1966 and recommended ways to help Vietnamese farmers increase agricultural production. A second USDA team followed up with specific plans for improved credit, fisheries, fertilizer use, and government organization. USDA has recruited 18 agricultural specialists for AID direct-hire, and the Federal Extension Service has recruited some 40 county agents for service in Vietnam's provinces. (Thirteen of these arrived in Vietnam in February 1967. The others will arrive in July.) The goal is to have at least one American agricultural adviser available in each province as the areas are made secure. In addition, 50 more USDA technicians have begun working in Vietnam on credit and cooperatives, irrigation and rural engineering, plant and seed propagation, and forestry. The 90-man USDA team will be trained and on the job by July 1967.

### USDA Agencies Help Build World Agriculture

Virtually all of our agencies are active in world agricultural development. Scientists from our Agricultural Research Service are working with Asian and African scientists to get food research programs underway and better crop varieties into production. A newly developed maize (corn) hybrid with double the yield capacity of local varieties is now in the hands of African farmers, who planted 100,000 acres of it in 1966. Only 3,000 acres of this hybrid were planted when it was first made available to farmers in 1963.

Increases in yields of 40 percent and 21 percent over local varieties were achieved with various pulse crops (edible legumes) in an ARS project in Iran and India. ARS/African research teams are well on their way in developing control measures for contagious bovine pleuropneumonia, a cattle disease which annually kills thousands of African cattle. And another USDA/African team is seeking methods to eliminate the tsetse fly, a scourge over much of Africa.

In Nepal, USDA assistance has enabled the government to establish a supervised farm credit program, similar to that of our own Farmers

Home Administration. This will enable Nepalese farmers to avoid traditional money-lenders who charge up to 50 percent interest on farming loans. Under the new system, funds are distributed by a central cooperative bank to local rural cooperatives, the membership of which is made up of farmers. The local co-op lends money to the farmer so he can buy tools, seed, and fertilizer, and employs a credit supervisor who guides the farmer in using both credit and tools wisely. The cooperative also helps the farmer store and market his products and sells him farm supplies at fair prices.

A number of nations are initiating programs to improve soil and water conservation practices with the help of our Soil Conservation Service. In 1966, SCS had 27 conservation technicians on long-term assignment to projects in Tunisia, Thailand, Nigeria, Nicaragua, and Brazil. Some 30 SCS technicians were in 17 foreign countries on short-term assignments.

New programs were started in India and Ecuador in 1966, and SCS in fiscal 1967 will have 5 technicians stationed in Vietnam.

In 1966, REA personnel visited 5 countries to give assistance and guidance in setting up rural electrification systems.

Our Farmer Cooperative Service has several staff members in Latin America on 2-year assignments to train leadership there in sound cooperative operations.

USDA publications are in great demand. More than 200 USDA publications have been translated into Spanish by AID and distributed in Latin America—most of them how-to-do-it booklets on farming. Others were translated into French and Arabic for use in Africa and the Middle East.

A study of 26 developing countries shows that nations making the greatest progress in development have this in common: an aggressive national policy that stresses research, education, and training to improve agricultural production along with favorable incentives for farmers.

As we pointed out earlier, we are responsible in cooperation with AID for helping the developing countries provide agricultural training for their people. Most of this training is done here in the U.S. Since 1951 the USDA has coordinated training of some 37,000 agriculturists from 120 countries. These men and women who have studied in the U.S. are the foundation of the research, education, credit, marketing, and other agricultural institutions in their homelands. Agricultural improvement in developing countries rests on their knowledge, energy, skill, and vision.

Though most technical training in agriculture is sponsored by the Agency for International Development and conducted by USDA's International Agricultural Development Service, many high-level visitors, either under sponsorship of their government or self-financed, come to the Department each year for guidance.

Altogether during fiscal 1966 the USDA assisted 1,757 such visitors, including Ministers and Assistant Ministers of Agriculture, ambassadors and other ranking men and women from foreign governments. Training in the U.S. is supplemented by special courses at home, supervised by USDA/AID teams.

One such participant now holds the highest civil service position in Nigeria's agriculture; he is Permanent Secretary in the Nigerian Ministry of Agriculture.

Working closely with universities, farm organizations, private companies, and American farmers, we plan and supervise training programs adapted to the needs, cultures, and potentials of the participants' countries. Visual aids workshops for extension trainees, for example, show participants how to use and make visual aids from materials easily obtained at home.

To meet changing conditions in developing countries, we are continually modifying our training programs. Training has been enriched to include special programs during the Christmas holidays—programs which further help foreigners understand America and Americans. Special attention is now being given to intensive training in administration.

Our Extension Service naturally is heavily involved in training programs. Courses usually last from 4 to 6 months. Trainees spend time in States where geographic and climatic conditions are similar to those in their home countries. They study the Extension program as actually conducted in our counties, including organization, methods, and the coordination of agricultural, home economics, and youth programs.

They also have special classroom sessions at universities, and participate in seminars, workshops, and regional Extension schools set up for U.S. Extension workers. In addition, participants often live with a farm family to gain familiarity with the day-to-day operation of an American farm.

Foreign women, too, receive training in both home economics and Extension education, ranging from 6 months of field training in Extension in selected States up to 2 to 4 years of undergraduate or graduate study in universities. Other training opportunities include special short courses and seminars.

For example, seven women from Nigeria are now enrolled in a course in applied nutrition at Iowa State University. The course includes laboratory studies of foods characteristic of the eating patterns of Nigerian village families and help in modifying recipes to improve the nutritional quality of daily diets. We have also instituted a series of seminars in foreign countries using men and women previously trained in the United States to teach others in their home countries.

More than 175 officials from 44 countries have completed training in agricultural administration. Programs using these people have been conducted in Sudan and Turkey. Extension has also conducted 21 annual seminars in cooperation with the Agricultural Missions, Inc., for overseas church workers.

### 4-H International

The 4-H Club plan now reaches around the world, the idea having been adapted to suit varying needs and conditions in about 75 countries. One way people elsewhere become acquainted

with 4-H is through the International Farm Youth Exchange, now 19 years old. Since IFYE began, more than 4,000 young men and women from 69 countries and the United States have participated.

In 1966, 205 young men and women were IFYE's—100 outbound U.S. delegates representing 35 States and Puerto Rico, and 105 inbound exchangees representing 35 countries.

A summer family-living experience in selected European or South American countries is now available to older 4-H members each year. This 4-H Member International Exchange activity includes 8 weeks of studying rural youth programs while living with host families, plus about 10 days of guided travel to countries near the host countries. In addition, 154 former 4-H Club members have volunteered for the Peace Corps program conducted by the National 4-H Club Foundation in Brazil, Malaysia, and El Salvador.

## SCIENCE TACKLES THE PROTEIN PROBLEM

No one is more committed to the challenge of feeding the hungry world than our agricultural scientists. They are determined to use research with increasing effectiveness to win the battle against malnutrition and the resulting misery and disease that envelop the poor countries of the world.

A protein deficiency, especially in young children, the sick, or pregnant and nursing mothers, can have dire consequences.

This is especially serious for pre-school children whose brains reach 90 percent of full weight before age four. If children do not get enough protein in this critical period, the brain never develops properly.

Most of the developing regions, of course, are too poor to convert feed and forage into animal proteins—meat, eggs, and milk —such as constitute so large a proportion of our own diets. On the other hand, the major oilseeds—soybeans, peanuts, and cottonseed, with high protein content—are grown in all parts of the world. Yet they are processed for food to only a very limited extent.

There seem to be two major reasons for this. First, the towns and villages in developing regions lack the necessary processing equipment. They cannot afford expensive equipment and they do not have the know-how to develop inexpensive processes.

Second, people in the developing regions, as people everywhere, tend to eat what tastes good to them. They have not yet devised ways to incorporate these protein sources into foods they enjoy eating.

About 2½ years ago we began to work on this dual problem in the laboratories of our Agricultural Research Service. Using a considerable backlog of information accumulated over a period of more than 20 years, USDA scientists set out to develop processes which would be cheap enough and simple enough to be

applicable anywhere so that indigenous protein sources could become available for food. Second, they set out to develop information on food formulations, home preparation, and home use which would be applicable to the dietary patterns and economic status of people of different areas, countries, and cultures. Our objectives were to make protein available and attractive.

We enlisted the participation of trainees from the developing countries. Their participation is, and will be, needed both in the pursuit of our research here and in the operation of the new processes and use of the new products in their homelands.

We are also working with AID, the United Nations Children's Fund, and the food industry.

### Making Protein More Readily Available

Our scientists have developed a hand process for making soybean flour. It is designed to fill the needs of people in small villages where skilled labor, electricity, and other services are unavailable. It uses inexpensive and readily-available equipment. It discards only the hulls and converts the soybeans to a nutritious full-fat flour.

The following description shows how easily a nutritious soybean flour can be made.

> Soybeans are taken right off the field, placed in a cloth bag and soaked in water for a few hours or overnight. The soaking shortens the cooking time and provides the right moisture content without close supervision.
>
> The sackful of soybeans is then immersed in an open kettle, over an open fire, and cooked in boiling water for 10 minutes. This brief cooking is more rigorous than pasteurizing. It deactivates growth inhibitors but does not remove or damage the protein.
>
> The soaking and cooking process is simple enough for a child to use. Regardless of how much heat is applied, the boiling point of water remains constant.
>
> After cooking, the beans are spread out to dry. When dried, the whole beans are cracked by simple hand-operated ARS developed equipment.
>
> Next, the hulls are removed, again by hand-cranking which operates a a blower, causing the light hulls to be lifted and carried to one side.
>
> More hand-grinding then reduces the dehulled soybeans to flour.

The finished product contains more than 40 percent protein and 20 percent fat. It can be used in beverages, soups, and various cooked dishes.

With simple equipment made from readily available materials, ARS estimates that 5 men can produce 300 pounds of soy flour in an 8-hour day—enough to supply half the daily requirement of protein for a village of 1,600 inhabitants.

This is a highly significant development. But it is only one part of a two-part job. We are also pushing forward to carry through the second part.

### Making Protein More Attractive

Neither food availability nor knowledge of nutrition can be depended on to guide food choice wisely. The diets of our own teenagers offer proof enough of this. Pleasant taste, or accepta-

bility, is the key. We need to find ways of incorporating new food sources of protein into familiar foods or into good tasting new products that fit easily into local food use patterns and preferences.

We have been seeking basic formulas, food combinations, and preparation procedures for soy, peanut, and cottonseed flour that will be attractive to people in the developing regions—attractive not only in taste but in simplicity of preparation and economy of cost.

Here, too, progress is being made. This is the verdict of students and visitors from Africa and other underdeveloped areas whom we have enlisted in testing acceptability of the food products. The opinions of these foreign visitors are of great importance. Americans are not the best judges of oriental-type foods for people whose tastes differ from ours. For example, the Taiwanese like soy beverage without added flavor, while we prefer the more familiar ice cream parlor flavors.

Nutritious, high-protein flours have been developed.

Food specialists have combined these flours with vegetables and cereals grown in developing countries to make food products the native people will like and want to eat.

Soy flour has been used in beverages, yeast breads, cornbread, biscuits, pancakes, unleavened breads (tortillas, chapatis, puris, parathas), noodles, mush, gruels, soups, stews, curries, sweet-potato-rice combinations, cookies, and desserts. Many of these products rated good to excellent in acceptability.

Peanut flour used in formulas for chapatis, puris, parathas, yeast bread, and rolls could replace one-fifth to three-fifths of the wheat flour presently used. Cookies made with 60 percent peanut flour test and taste excellent.

The most acute protein nutrition problem, as I have indicated, is in the infants and toddlers. Beverages and gruels with adequate protein are needed here. Peanut flour studied to date makes poor uncooked beverages because the flour does not remain in suspension. But soy flour can be used to make a desirable beverage which babies have accepted. It is simple to flavor the drink with chocolate, banana, cherry, strawberry for different tastes. The beverage can give the youngster as much protein as milk. The essential amino acid building blocks for body tissues are present in quantity, as are the needed calories.

In areas of the world where food is short in both quantity and quality, protein foods do not normally go mainly to the young children. But a beverage or gruel from a high protein, protective food such as soy flour could go a long way in supplementing the low protein starchy cassava, yams, rice, corn, wheat flour, or other foods of these youngsters. If the soy replaced one-third of a cereal such as rice or corn, the protein contribution would be more than doubled, and it would be better protein as well.

The possibilities and opportunities are great. The need is real.

A three year market study to test the reaction of the people of El Salvador to inexpensive high-protein beverages made from

products grown in Central America will begin in 1967. The program is financed by AID and the Pillsbury Company of Minneapolis and will be carried out with the cooperation of businesses in El Salvador.

The research to backstop such action programs is well along. Work is going forward along two lines:

We seek not only to make more use of protein-rich oilseeds (soybeans, peanuts, and cottonseed), but also of pulse crops (dry beans, peas, and other large-seeded legumes).

In the Regional Pulse Improvement Project, scientists at our research center at Tehran, Iran, in only their second year have already:

Selected lines of various pulse crops that outyield local varieties by anywhere from 20 to 60 percent.

Determined that phosphorus is the key nutrient for grain legumes.

Found evidence of genetic resistance to weevils and corn earworm, both highly destructive insects.

A similar research center at New Delhi, India, has been staffed with senior U.S. scientists who are now in the middle of their first crop year. We fully expect this group of highly-competent, dedicated scientists to produce solid research results that India can put to use to help feed her starving millions.

We are also intent on getting more protein into the familiar grains which provide food for most of the world. Progress in this area includes:

Discovery of 3 new protein-rich, high-yielding wheat varieties—1 each from Africa, India, and Brazil—that should be of great genetic value in breeding more protein into wheat.

Extensive pilot tests for fortifying wheat with the amino acid lysine to make wheat more valuable as a protein source for humans.

A new protein-rich rice flour, made from the outer layers of parboiled rice, that seems especially promising for improving diets of children in protein-scarce countries.

Tempeh, a fermented cereal-soybean food product, developed as a supplement to protein-deficient diets.

Experiment station scientists have produced a "milk" from wheat flour. This new member of the instant foods family is a bland, palatable beverage readily dispersed in water.

Nutritional properties of this protein-rich product are similar to non-fat dry milk. Containing over 85 percent of the wheat flour protein, the powder can be added to soups and other prepared foods to fortify their nutritive value.

### Sending High Protein Food Abroad

During fiscal 1966, USDA bought and offered for donation overseas more than 62 million pounds of special high-protein food products. The quantity purchased is not yet important—it merely marks the beginning of a program for which the need is staggering.

Among these special foods developed, purchased, and distributed overseas thus far through Food for Peace programs, are

two formulated food products, soy grits, soy beverage powder, and gelatinized corn meal.

Initially, these foods were used in a pilot feeding program for refugees and infants in South Vietnam, and later for donation through voluntary relief agencies to other countries eligible for food assistance.

## OTHER RESEARCH AIDS

Scientists in 29 foreign countries are making substantial contributions to their own agriculture and to that of the U.S. under P.L. 480 grants awarded by our Agricultural Research Service. Such grants are paid for in foreign currency from the sale abroad of our surplus products.

In fiscal 1966:

A Nobel Prize scientist in Finland proved that protein is not essential in a milk cow's diet. The potential is milk production in countries that cannot now produce protein feeds, and future changes in feeding practices for dairymen everywhere.

In Israel, a biochemist has developed a protein-rich mixture of soybeans and chick-peas which, when fed to young chickens, proved superior in nutritive value to fishmeal, cottonseed meal, and soybean meal.

In Sweden, scientists have bred lines of white mustard containing as much as 59 percent erucic acid, a substance with unique properties highly valuable for industrial use.

Here at home, our scientists have developed better cotton and paper bags for protecting flour, cornmeal, and other milled cereals from insect damage during shipping and storage. In laboratory tests, specially constructed and treated cotton bags have been exposed to severe insect attack for periods up to a year with the contents successfully withstanding infestation. New multi-wall paper bags proved highly successful in keeping out insects during 7-month tests carried out in Brazil with the cooperation of the Agency for International Development.

A new field of agricultural research holds fascinating possibilities. The National Aeronautics and Space Administration is supporting USDA research to find out if instruments in a spacecraft can identify soils, crops, livestock, and forests on earth, and perhaps determine their condition, through "remote sensing."

The first step is to decipher agriculture's "spectral signatures." Which parts of the electromagnetic spectrum, visible or invisible, best identify soils, plants, and animals? And how can differences in type, health, or growth be detected by multispectral cameras and other sensing devices? In seeking answers to these and other questions, USDA and university scientists are laying the groundwork for the eventual use of high-flying planes or experimental manned orbital flights in agricultural surveys.

## THE LONG-RUN CHALLENGE

The life or death question in the long-run is whether the world can win the War Against Hunger. Can it eliminate widespread malnutrition? Can it enter an Era of Plenty?

Much agricultural production is still carried on like this.

American engineer discussing irrigation problems in developing country.

Sometimes, some of the answers given to these questions seem completely inconsistent. And yet, there is general agreement on the basic determinants of world food supply.

World population could reach 4.3 billion to 4.4 billion within 15 years. Some four-fifths of the additional people will be concentrated in the developing countries. These people will not be satisfied indefinitely with diets that are short, both in calories and in proteins.

Adequate diets in terms of calories could be achieved in less than two decades if within these countries grain production were to increase henceforth by 1 percent per person per year. If adequate protein could also be built into diets over these same years, there would be victory in the war on hunger in the emerging nations.

It can be done, and if some changes are made, it will be done. Over the next 15 to 20 years, we must help the diet-deficient regions as a whole increase their food output faster than they have been doing. The rapid progress of Israel, Mexico, Taiwan, and a number of other nations in recent years shows the possibilities.

In 1942 the average wheat yield in Mexico was only 11 bushels per acre. Mexico was importing half of its wheat. By 1964, the average yield was 39 bushels—total wheat output was up 6½ times and Mexico is now a wheat exporter.

In Mexico there was a balanced total program that increased soil fertility, suppressed pests and disease, and made use of irrigation and improved varieties. Equally important, the program gave farmers incentives. Farm prices were supported. Farmers and others interested in farming were shown that increased income would come from increased investments. In the main, growth took place in newer areas and not in the old areas which might have been more difficult to change. Modern technology was one of the key ingredients. It was mobilized for use, and there was incentive to use it.

There is a great disparity between the developed and underdeveloped countries in the mobilization of technology. In India and China one agricultural worker still produces less than enough for himself and only two or three others. This can be changed.

But the change cannot be effected simply by transferring the know-how of the advanced countries to the developing countries. Technology must be adapted to the climate, soil, farming conditions, skills, capital and credit circumstances of each local agricultural community.

Sharing of know-how and capital investment now planned in the developing nations is increasing. There is growing realization that enhanced agricultural capacity is crucial to development.

It is also reasonable to expect and to hope that countries besides the United States will increase their contributions to the development of poorer people. Of the food aid supplied during the past decade, all but a small fraction has been provided by the United States.

When one looks at the tremendous forces the developed countries can or will be able to bring to bear on this problem—atomic power, the computer, rapid transportation, modern communication, and present and coming breakthroughs in biological and physical science, including agricultural science—then indeed, one must be convinced that victory over hunger *can* be won.

The race is not really one between population and food supply. It is really a race between what *could be done* and *what will be done.*

## THE FOURTH CHALLENGE: TO SERVE THE PEOPLE'S NEEDS

> "The agriculture department . . . is precisely the people's department, in which they feel more directly concerned than in any other."
>
> President Lincoln, Fourth Annual Message to Congress.

The last and broadest of our challenges is to serve the needs of the general public. The USDA is not of, by, and for farmers only, but of, by, and for the people.

Among an extremely broad battery of services, including research, regulatory, and other activities, the USDA in 1966:

> Helped farmers provide the world's most abundant, most varied and cleanest food supply for the smallest relative cost anywhere in the world.
>
> Carried out the biggest food distribution program in the world.
>
> Developed and helped the States and private industry develop more new and improved food and fiber products than any other agency in the world.
>
> Provided leadership and cooperation in the world's biggest soil, water, and timber conservation program. In carrying out this program the USDA administered the biggest recreation complex in the world; sold more timber than the biggest lumber company in the world, and operated and maintained the biggest and most modern fire department in the world.

The USDA, in short, provides more services to more people than any other agency of government. About 90 percent of our man-hours and more than two-thirds of our annual expenditures are devoted to services of primary benefit to the general public.

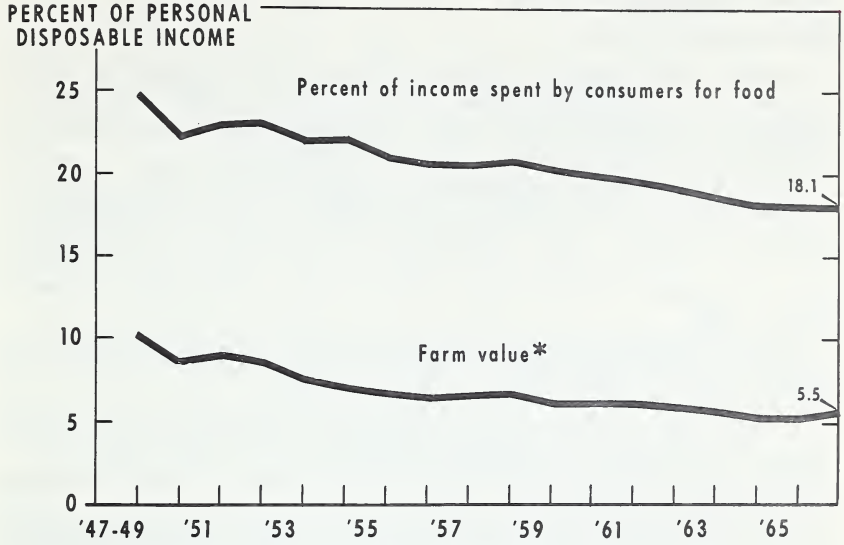
### COST OF U.S. FOOD RELATIVELY LOW

Food continues to be one of the nation's best bargains. Food expenditures in 1966 took only 18.1 percent of average family spendable income, the smallest share in history. In 1960 food took a bite of 20 percent, and in 1947 about 26 percent. Back in 1890, it is estimated, consumers spent about 40 percent of their income for food.

Compared with just a few years ago (1957–59), an hour's wages for factory work in 1966 bought 11 percent more bread, 14 percent more round steak, 15 percent more milk, 22 percent more eggs, and 18 and 29 percent more butter and margarine, respectively. In no other country in the world do consumers get such an abundance of high quality food for such a small proportion of their income.

The difference between spending 18.1 percent of disposable income for food compared with 20 to 26 percent may not seem particularly significant. Actually, it adds up to many billions of dollars for the nation as a whole. Food expenditures in 1966 totaled around $91 billion. If we had spent as large a proportion of disposable income for food as in 1960 our food bill would have been about $101 billion—up $10 billion. If we had spent 26 per-

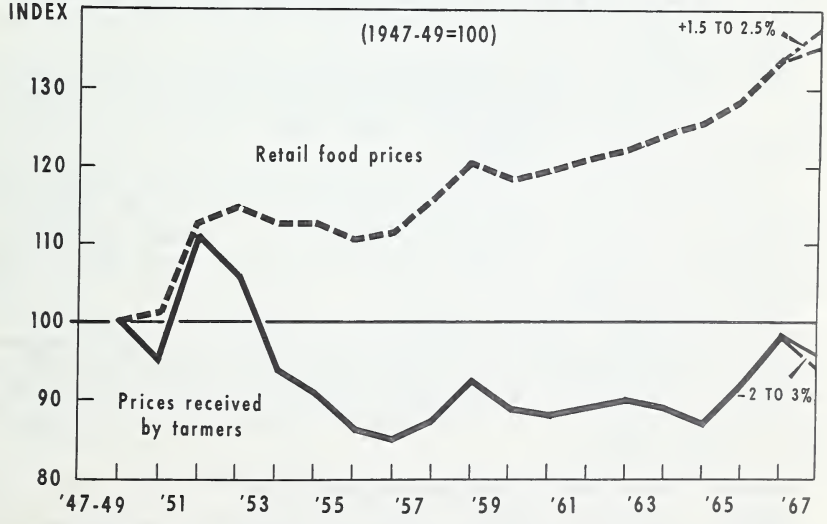
## CONSUMER EXPENDITURES FOR FOOD RELATIVE TO INCOME AVERAGE 1947-49 AND ANNUAL 1950-66




*FARM VALUE OF FOOD PURCHASED BY AMERICANS AS A PERCENTAGE OF PERSONAL DISPOSABLE INCOME. 1966 DATA ARE PRELIMINARY.

U. S. DEPARTMENT OF AGRICULTURE

## PRICES RECEIVED BY FARMERS AND RETAIL FOOD PRICES 1947-49 AVERAGE, ANNUAL 1950 TO 1966 AND ESTIMATED 1967




U. S. DEPARTMENT OF AGRICULTURE

cent, as in 1947, the bill would have been about $130 billion—up $39 billion. In terms of a family of four this would have meant an additional cost of $800.

### The Price Rise of 1966

Despite the relatively favorable cost of food, American consumers were concerned when retail prices in 1966 rose by an average of 5 percent over 1965 compared with an increase of 1–1½ percent that has been typical of recent years.

There were several causes for the higher prices. First, domestic demand for farm products registered one of the biggest advances on record. U.S. population grew by about 2⅓ million. And not only were there more consumers, they also had more money to spend—about 7 percent more per person, after taxes, than in 1965.

Second, foreign demand increased. Exports of farm commodities in calendar year 1966 reached a record of $6.9 billion, 11 percent above the $6.2 billion recorded in 1965.

A third factor was a rise in military buying—up 10 percent during 1966. Not only was the size of the armed forces increased, but military personnel use appreciably more food per person than do civilians.

A fourth factor was a reduction in available supplies of pork, eggs, milk, and fresh vegetables during the winter and spring.

Overall, the net production of farm food commodities declined 1 percent between 1965 and 1966, but the strong demand brought about an increase of 3 percent in the total use of these products. As a result, total food stocks declined about 8 percent.

Finally, the pressure of increased demand raised total U.S. expenditures for food 7 percent above 1965. Of this increase, 5 percent was accounted for by higher prices, with the remainder due to a larger population which consumed about 1 percent more food per person.

For 1966 as a whole, the index of food prices at retail averaged 14.2 percent above the 1957–59 base, compared to a rise of 13.1 percent in the overall Consumer Price Index compiled by the Bureau of Labor Statistics.

A considerable part of the rise in food prices was due to an increase of 23.2 percent in the price of food eaten away from home, particularly in restaurants. The rise in the price of food purchased for use at home was 12.6 percent—somewhat less than the overall index.

The focusing of public attention on food prices has caused many to overlook the much greater advances in other components of the consumer price index, particularly the services. For example, prices for transportation services in 1966 were 24.3 percent above the 1957–59 base while medical care services were 33.9 percent higher.

### Current Food Price Situation Favorable to Consumers

Prices received by farmers for all commodities in December 1966 averaged 5 percent below the peak month of August 1966.

Over the same period there was a 1 percent drop in retail food prices.

Per capita food supplies in 1967 will be appreciably larger than in 1966. As a result, retail food prices are expected to average nearly the same as in 1966. Any advance is likely to be very small and associated with rises in marketing costs.

Increased food expenditures in 1967 will reflect primarily gains in population and in per capita food consumption. Further gains in consumer income are expected to outpace the rise in food expenditures. Accordingly, the percentage of income spent for food likely will drop below the already low level of 18.1 percent in 1966.

### Farm Prices Still low

The widespread concern over the rise in farm and food prices in 1966 has obscured the longer-time relationships between these two sets of prices. The important stabilizing effect that farm prices have exerted on food prices and on the cost of living throughout the postwar period seems to have been forgotten.

The retail price of food has risen steadily since the immediate postwar period of 1947–49. In 1965, the index of retail food prices was 25 percent above this base period and in 1966 it was about 35 percent higher. But prices received by farmers in 1965 were 8 percent *below* the average level of 1947–49. *Despite the unusual rise in 1966, farm prices in 1966 still averaged 2 percent below the base period.*

Nearly all of the increase in food costs during the postwar period has resulted from increased marketing charges. Part of this has been due to rising costs and part to increased marketing services demanded by consumers.

It is easy to see how prices that are too high penalize consumers, but it is easy to forget that fair prices must be paid to producers. If consumers are to obtain abundant supplies of high-quality foods, the farmers who produce these foods must get adequate returns for their efforts and for their investment.

The dairy situation provides a dramatic illustration. Dairy farmers have culled herds heavily because of low milk prices and the higher prices that could be obtained for cows sent to slaughter. Some farmers have even moved out of dairying because of continued low income and improved off-farm opportunities. The number of dairy cows declined by a record 6 percent in 1966 and milk production dropped sharply. Similar trends in other sectors of agriculture are likely, if farm prices revert to earlier levels. If the increasing food needs of an expanding population and expanding world markets are to be met, farm prices will have to remain at levels necessary to induce the required output.

What the farmer wants, and what he is clearly entitled to in our expanding economy, is an income that will provide a return for his labor and capital comparable to that obtained for similar efforts and capital outlays in the rest of the economy. In this connection, it should be emphasized that although per capita dis-

posable income of the farm population has been improving since 1960 it is only 66 percent of the nonfarm level. Unless prices that will sustain increasing output of food products can be attained by farmers, the exodus from some segments of agriculture may continue and we could see food prices rising to much higher levels than in the past.

## SHARING FOOD ABUNDANCE

Though the average American is better fed today than ever before, and though the U.S. food supply dwarfs that of any other nation, many millions of our people still have inadequate diets.

Through several consumer food programs the USDA wages a continuing war against malnutrition. Our goal is to close the nutrition gap for America's less fortunate citizens within the next 5 years. Food distribution programs are already helping some 45 million Americans—among them the elderly, the unemployed, the disabled, mothers left to rear children alone, and children in schools and institutions—to improve their diets.

### School Lunch Program

The year 1966 marked the 20th anniversary of the National School Lunch Program. During the year, nutritious lunches with milk were served to 18 million children in 71,000 schools. Most of the children paid about half the actual cost of the lunches and Federal, State, and local contributions made up the rest. About 10 percent of the 3.1 billion lunches served were given free to children whom local officials found unable to pay the regular price.

About 200,000 needy children got the best food bargain of their lives, thanks to a first-time Congressional appropriation of $2 million for a demonstration project that brought special school lunch aid to more than 800 depressed-area schools. Regular lunch prices were reduced to as low as 10 or 15 cents. Children in dire need received free lunches. A flood of grateful responses came from teachers and students across the nation.

> A student wrote to the President that "having a lunchroom and prepared food is great! The balanced meals keep us active for recess and ready to work the rest of the afternoon."
>
> A school nurse in Washington, D.C., said, "Already I see many more happy faces. The school lunch is often the only good meal these children get all day."

The Child Nutrition Act of 1966 authorizing funds to help needy-area schools buy food service equipment, help finance added local administrative costs, and start pilot breakfast programs as soon as adequate appropriations are made available, will enable us to bring more and better food to needy children in the future.

This 8-year-old enjoys a portable hot school lunch.

A grocery store manager participating in Food Stamp Program.

### Special Milk Program

This program enabled us to provide extra milk at reduced cost to children in more than 97,000 schools, child-care centers, summer camps, and orphanages. The 3.1 billion half-pints of milk served under this program, plus that served with school lunches —adding up to 6.2 billion half-pints—was more than 5 percent of all fluid milk marketed in the U.S. in fiscal 1966. We reimburse schools and institutions participating in the Special Milk Program for part of the cost of the milk they serve.

### Food Stamp Program

We more than doubled the geographical dimensions of the Food Stamp Program and increased by 555,095 the number of people helped by food stamps during calendar 1966. At the year's end the program was functioning in 477 areas in 42 States, including the District of Columbia, and 1.3 million needy people were buying more and better food with food stamp coupons.

Low-income families participating in the program during calendar year 1966 invested $147.9 million of their own money to buy food stamp coupons worth $231.4 million. The coupons, spent like money at local food stores, brought nearly $85.3 million worth of additional food to family tables and stimulated the local economies of food stamp areas.

> A retailer in Maryland said, "Customers are getting a bonus and the grocer in the low-income areas is getting extra business with this coupon plan. Food coupons pose no problems . . ."
>
> An elderly couple in Gary, Ind., wrote, "We just had to say 'thank you' for these food coupons we are getting to help supplement our small income, which is only Social Security. . . . This too makes us happy to know someone cares enough to increase our daily bread. . . ."

During fiscal 1967 the program will continue to be extended gradually to bring its benefits to an additional 700,000 people.

### Commodity Distribution Program

Needy Americans in over half the nation's counties and more than 100 cities had their diets supplemented by direct food donations out of foods acquired under USDA's price support and surplus removal operations. During March 1966, the peak month of participation, nearly 4.8 million persons, in addition to those taking part in the Food Stamp Program, were supplied with a variety of staples including canned chopped meat, nonfat dry milk, margarine, peanut butter, flour, cornmeal, shortening, split peas, raisins, rice, rolled wheat, and bulgur.

> Project Help, a demonstration food distribution project covering 75 Mississippi counties with the assistance of a $1.6 million grant from the office of Economic Opportunity, greatly extended the reach of USDA-donated foods in that State. During the first 4 months of the project the number of people receiving food assistance increased from 278,000 to 474,000. A statewide nutrition education program is helping needy families learn how to upgrade their diets.

Schools, Head Start Programs, and charitable institutions also received donated foods to help bolster the diets of children and needy adults. During fiscal 1966, 543 million pounds of foods were donated to schools (plus another 245 million pounds bought especially for National School Lunch Program schools), 145.1 million pounds to institutions, and 854.9 million pounds to needy families.

### Plentiful Foods Program

Food shopping columns, newspaper ads, radio-TV bulletins, and monthly roundups of the current "plentiful foods" all give consumers reliable hints on good food buys. The source for much of this information is our Plentiful Foods Program.

Each month our economists and marketing specialists, after examining the statistical estimates of food production and supplies for the next several weeks, list the foods most likely to be in heavier than usual supply and therefore "good buys" six weeks hence. With the help of mass media and the vast food industry the word gets to those who can use it: millions of food buyers from all walks of life.

Teachers and welfare and nutrition leaders in low-income areas make especially good use of plentiful foods information in their work with disadvantaged families.

Special plentiful foods campaigns were conducted during the year for pecans, cherries, prunes, peanuts, raisins, and honey.

## OTHER FOOD SERVICES

The people of the United States have the safest, cleanest, highest quality food in the world—largely because of USDA inspection and standards and grading programs.

### Meat and Poultry Inspection

No government program touches more people every day than our meat and poultry inspection services. All meat and poultry products shipped across State lines must carry the U.S. inspection mark of approval.

Our meat and poultry inspectors assured the wholesomeness of more than 60 billion pounds of meat and poultry moving in interstate commerce during fiscal year 1966, and supervised sanitation and handling practices in the plants where these products were prepared.

As convenience foods become ever more popular, inspection of cut-up poultry and processed poultry continues to increase. Inspections of these products were up 19 percent in 1966 over a year earlier.

Our meat inspectors passed as wholesome more than 47.7 billion pounds of meat and meat products prepared in Federally-inspected packing plants. Federal meat inspection was carried out in 1,931 plants in 812 cities and towns during fiscal 1966, compared with 1,775 plants in 743 towns during fiscal 1965.

Labels of processed products must also meet with USDA approval for accuracy, adequacy, and truthfulness. We reviewed nearly 70,000 new and revised labels during the fiscal year and returned approximately 5,200 for modification so that consumers would not be misled.

### Grading Programs

USDA grade marks on food are there to tell consumers what they are getting. The housewife can pick out U.S. Prime, U.S. Choice, or U.S. Good beef according to the price she wants to pay and the kind of meat dish she has in mind. When she sees U.S. Grade AA butter and eggs and U.S. Grade A chickens and turkeys, she knows she is getting the best. To buy by the grade is an effective way to get full value for food dollars.

USDA food specialists in 1966 graded 60 percent of the nation's total commercial beef production, 80 percent of the frozen fruits and vegetables, 25 percent of the shell eggs, and 60 percent of all poultry.

In addition, we graded 55 percent of the nation's butter supply and 40 percent of the nonfat dry milk. Among the cheese graded (2 percent of total supply) was the mammoth 34,000-pound block of Cheddar cheese on display at the New York World's Fair. It was "U.S. Grade A" on the basis (among other factors) of a "pleasant aged cheddar flavor and uniform quality."

Two-thirds of the nation's grain was marketed under USDA grades, 96 percent of the rice, 40 percent of the beans, 80 percent of the peas and lentils, and 98 percent of the nation's hops.

In more specific terms, we graded 5 billion pounds of poultry (1.2 billion pounds of turkeys and 3.8 billion pounds of other poultry); more than 13 billion pounds of meat (including 11.4 billion pounds of beef); almost 12.5 billion pounds of processed fruits and vegetables; and more than 4 billion pounds of frozen fruits and vegetables.

We graded 1.6 million carlots of fresh fruits and vegetables—equivalent to a railroad train 13,000 miles long, or long enough to stretch from coast to coast more than four and a half times!

Another important consumer program, the egg products inspection service, is similar to grading in that it, too, is voluntary. During fiscal year 1966, we certified the wholesomeness of 552 million pounds of liquid egg products (94 percent of the nation's total supply), and 36 million pounds of dried egg product (74 percent of total supply).

Nonfood items are also eligible for grading service. Thus more than 95 percent of the nation's cotton crop—about 15 million bales—was classed for farmers in Smith-Doxey Cotton Improvement Associations. And all tobacco sold at auction (95 percent of total production) was graded, as well as 77 percent of the nation's gum rosin and 34 percent of the turpentine.

### Food Standards

A grading program, of course, is only as good as the standards on which the grades are based. Our specialists work constantly to make sure that standards for farm products are kept up-to-date with current marketing practices and with consumer needs.

Accordingly, in fiscal 1966 we issued new standards for poultry roasts, Swiss cheese, mixed nuts in the shell, okra and blueberries. We developed new standards for yield grades for slaughter cattle and for feeder pigs. We issued revised standards for 11 fruit and vegetable products, for wool and for cotton (in the last case, adding micronaire readings to official cotton standards).

We cooperated with the Codex Alimentarius Commission, sponsored by the Food and Agriculture Organization and the World Health Organization, in its program for international food standards. Several Consumer and Marketing Service specialists attended meetings of this Commission to develop international standards for a number of food products, such as fats and oils, dairy products, and meat and meat products. International standards for about 10 varieties of natural cheeses were developed, including such popular varieties as Cheddar, Edam, and Gouda. Standards for more than 70 varieties of cheese are being considered by the Commission.

## NEW AND IMPROVED PRODUCTS

### New Convenience Foods

Foods in new forms continue to emerge from our research laboratories. Our scientists made fruit-ice lollipops—a favorite of children—more nutritious, yet just as flavorful, by replacing some of the sugar with dried cottage cheese whey.

We developed several new convenience foods: Dry beans that cook and are ready to serve in only half an hour; dry apple flakes for "instant" use in applesauce, packaged cereals, cake mixes, confections, other baked goods, and perhaps apple butter; and grapefruit crystals that dissolve readily in cold water to make a good tasting, nutritious grapefruit juice.

Drying fruits with a new sugar process makes them useful for eating "as is" or packaged in breakfast cereals.

The discovery of a new enzyme in sweetpotatoes by ARS chemists opened the way to improve the manufacture of instant sweetpotato flakes. The enzyme may also be useful in processing cereals and in fermentation processes.

Consumers probably will soon be able to buy fresh peaches, already peeled and sliced and at the height of their color and flavor, thanks to a new process devised at the Georgia Agricultural Experiment Station under an ARS contract. The new product is made from peaches too ripe to ship for the fresh market and, heretofore, largely wasted.

### Better Quality Foods

Several new varieties of fruits and vegetables developed by our research were released to growers during the year. Among them were a new late-ripening peach, an early-maturing nectarine, apples tailor-made for the Northern Great Plains, blackberries that are moderately winterhardy and thornless, all-purpose snap beans, and disease-resistant tomatoes.

### Federal-State Marketing Improvement

The marketing of agricultural products is improved through the matching Fund Program for marketing services, a Federal-State self-help program in which State funds are matched by Federal funds for projects in quality improvement, market development, and other marketing service work.

A project in Pennsylvania to strengthen the State's failing lamb industry helped improve the overall quality of lamb sold to consumers and supplied valuable consumer information on selecting and preparing lamb dishes.

Consumers may soon be able to select potatoes according to the use they have in mind. The Oregon Department of Agriculture is experimenting with identifying cooking characteristics of potatoes through specific gravity tests so they can be sold as bakers, boilers, or for other uses, and packaged separately for convenience of selection by the consumer.

A winter supply of sweet corn has been made possible in part by a matched fund project in Florida to improve the marketing of sweet corn grown in the southern part of the State. To gear production to demand, specialists advise growers on planting schedules and sweet corn now is available all year.

### New Marketing Methods Raise Quality

To help get foods to consumers in tip-top shape, our marketing researchers developed an instrument that sorts fresh fruits and vegetables according to ripeness and freedom from internal defects. We also supplied growers and packers with guides for precooling peaches and lettuce before shipment; compared methods for reducing decay of sweetpotatoes during marketing; described improved egg-cleaning equipment and techniques that minimize breakage and spoilage; and recommended ways of reducing soft rot in bell peppers after harvest.

The quality of food is often impaired and much food is actually spoiled in big city marketing centers. These marketing centers oftentimes were built many years ago and facilities were added as needs increased. They are now outmoded and inefficient, have inadequate refrigeration, and are plagued by crowding, traffic congestion, and theft.

Our ARS marketing specialists have saved the food industry and consumers millions of dollars by planning efficient food marketing centers for New York, Philadelphia, Pittsburgh, Milwaukee, and other cities. We have now planned new centers for food distribution for Chicago, Boston, and Springfield, Massachusetts, and for San Juan, Puerto Rico. The new central markets, when completed, will greatly reduce food waste, spoilage, han-

dling costs, and other marketing expenses. We estimate the savings in marketing costs will run from $25 million to $28 million a year. Consumers will benefit not only from these dollar savings but from fresher, better quality, more nutritious foods.

### Improved Cotton, Leather, Wood, Vegetable Oil

Our scientists continued their search to extend the convenience and life of cotton goods, particularly wash-wear garments with permanent presses. They blended chemically treated and untreated cotton fibers to produce improved, permanently pressed cotton garments with good abrasion resistance. They developed an experimental machine to remove short fibers from cotton before spinning, thus providing cotton products of increased strength and uniformity. Another machine that can thoroughly blend cottons from as many as 20 different bales increases processing efficiency and product quality.

> Firemen in Washington, D.C., are now fully equipped with cotton clothing made fire-resistant by a USDA process. Fire losses in the District dropped from $3.4 million in 1964 to $2.3 million in 1965. The D.C. fire chief credits part of the decrease to the fact that fire-resistant clothing allows his men to reach previously inaccessible blazes.

A new method for tanning leather with glutaraldehyde has vastly extended leather utility. The new process, now widely used in workshoes, makes leather resist perspiration and protects it against hardening and cracking. We expect the process to aid in making leather a truly washable material.

The world-famous Forest Products Laboratory at Madison, Wisconsin, has produced a battery of amazing new "wood" products. Chemicals, adhesives, preservatives, medicines, and new products for home construction have sprung from the Laboratory's many programs.

> The development of a dual linear micrometer not only advanced wood technology, but is saving the government more than $30,000 per year. This device enables researchers to measure and record wood cell diameter and cell wall thickness without the laborious preparation of microscope slides (which took thirty times longer) and without the need for optical measurement. Continuous measurements of a series of cells are possible down to dimensions of less than one micron (1/78-millionth of an inch).

The California Agricultural Experiment Station in conjunction with ARS has developed a new safflower oil with the characteristics of olive oil. This is of much interest to oilseed processors for industrial and edible use. The new variety offers interesting possibilities for use in foods, feeds, plastics, and coatings.

## IMPROVING FAMILY LIVING

To make the public more aware of our "family living" services, county Extension offices throughout the country conducted open house programs in November, featuring displays of educational materials. Though these services are available to all, they have special value for the poor and underprivileged.

Extension programs teach people to manage their incomes, purchase wisely, and make proper use of credit.

### Aids in Money Management

The Michigan Cooperative Extension Service, for example, has 9 home consumer marketing agents located in the State's metropolitan centers. These agents keep constant check on food supplies as they move from farm to table and provide homemakers with food-buying information through the mass media.

> More than 5,000 military men and wives on the Hawaiian island of Oahu were enrolled in money management classes taught by an Extension home economist. The classes, requested by the Education Department of the U.S. Army, assisted families in achieving greater satisfaction for money spent. The program is being expanded to more military bases and will be included as regular training to help families avoid financial difficulty.

More than 400 women in Genesee County, Mich., completed an Extension "Modern Mrs." course. The course gave helpful hints on planning family spending, keeping installment buying costs to a minimum, counteracting food misinformation, buying meats, and home decorating on a small budget.

New York Extension home economists in Suffolk and Nassau Counties reached busy young homemakers with a series of 18 weekly "Dear Homemaker" letters. An original mailing list of 200 more than doubled for the second series. Specific topics included buying rugs and furniture, credit, nutrition and meal planning, and home ownership versus renting.

### Food and Nutrition Education

In the past few years our Cooperative Extension Service has given special attention to young homemakers with pre-school children, especially the poor.

> Missouri Extension home economists help families achieve better nutrition through donated foods and food stamps. Due in part to Extension educational efforts, the number of St. Louis families using food stamps increased from 2,330 in November 1964 to 5,100 in May 1966. In 1966 over 96,000 families in 30 Missouri counties received donated food and in most of these counties Extension home economists gave guidance on food use.
>
> Home economists in 4 Alabama counties are in the third year of a pilot project to develop teaching methods and materials for young homemakers in low-income rural areas. Teaching outlines and 51 simple publications have been developed for persons with limited reading ability.

Nationally the Federal Extension Service has prepared five series of educational materials for use in teaching low-income, low-literate persons. These simple language aids covering clothing, house cleaning, child development, money management, and food and nutrition are purchased by State Extension Services on a cost-share basis.

Extension is also using more than 700 paid non-professional aides who work intensively with poor families. Nearly 10,000

aides employed by other agencies have received training by Extension home economists.

### Training Young Americans

Realizing the importance of teenage buying power in America, Extension personnel and volunteer 4-H leaders are helping young people with money management, clothing, food buying and nutrition, and home management projects. More than 650,000 4-H members studied the importance of balanced diets and learned to prepare nutritious meals. About 700,000 girls learned to make some of their own clothes, to buy clothes more carefully, and to care for their garments. About 127,000 4-H'ers were enrolled in home management projects, and 199,000 took part in some type of home improvement and furnishings project.

## SAFEGUARDING HEALTH

The USDA is not customarily thought of as a health-protecting agency, but it regularly makes immense contributions in this area. Penicillin, dextran, streptomycin, and other wonder drugs all have an agricultural background. We made further advances in health safeguards during 1966, both in controlling animal diseases transmissible to man, and in research which helps to protect public health and advance human medicine.

### Disease Control

Federal-State efforts culminated in ridding Nevada of bovine and swine brucellosis, eliminating tuberculosis and swine brucellosis in the Virgin Islands, and eradicating brucellosis from cattle in Massachusetts and Washington. Our scientists found that chickens may be bred for resistance to avian leucosis, a form of cancer in poultry.

Our research provided a commercially feasible method of pasteurizing egg whites, formerly a potential source of salmonella poisoning in foods prepared with little or no cooking. We amended USDA regulations on the marketing of egg products to require use of this process.

Other studies assured homemakers that properly operated mechanical dishwashers will effectively sanitize dishes but revealed that commercial drycleaning does not disinfect clothing.

We protect human as well as pet and livestock health by controls over the biological products used in diagnosis and prevention of animal diseases. In calendar year 1966, we exercised surveillance over the production of 9.8 billion doses of veterinary biologics and found that 95.5 percent of the serials tested were pure, safe, and potent.

### Contributions to Medical Research

Rice, deep-milled by an ARS process, is a promising major source of calories for infants and young children suffering from a form of mental retardation known as phenylketonuria. Milling

removes the outer layers of rice which carry a chemical these children cannot assimilate and which, building up in the blood, causes retardation.

Control of cancer may be aided by a world search we have launched to find plants containing substances that inhibit the disease.

Our research has developed a high-calorie fat emulsion from cottonseed oil for patients who must be fed intravenously for long periods—a treatment for sheepskins used as bedpads to help prevent bedsores during prolonged hospitalization—and miniature hogs for use as research animals by the Food and Drug Administration in evaluating experimental drugs.

Techniques developed by our scientists are also aiding medical research on the correction of birth defects and on the metabolism of fat.

## PROTECTING THE ENVIRONMENT

The nation is rightfully concerned about protecting food, water, and wildlife against contamination by pesticide residues. We responded to this concern with intensified efforts to find safer methods of controlling pests and to insure that pesticides can safely be used if label instructions are carefully followed.

### Pest Control

Progress on biological methods to replace or reduce the use of pesticides was aided by the development of synthesized chemicals that prevent insects from becoming adults, thus halting reproduction. Virus diseases were found to be safe and effective against four important insects and against citrus red mites.

Natural sex attractants that might be used to lure insects to destruction were extracted from carpet beetles and pink bollworm moths. We conducted successful tests using radiation sterilization to halt reproduction of pink bollworms and codling moths.

In other experiments we found chemosterilants that controlled both pink bollworms and nematodes.

Other promising alternatives to pesticides include blacklight traps to lure cabbage loopers to a chemosterilant, metal foil strips that repel disease-carrying aphids, and radiofrequency radiation that destroys insects in stored grain.

Searching for ways to use pesticides without endangering the environment, our scientists successfully treated soil with chemicals that are assimilated by cotton plants and in this form effectively control boll weevils feeding on the plants. They also developed methods to apply pesticides in restricted amounts—for example, by covering soil with cloth impregnated with herbicides, drawing wax bars treated with 2,4-D between crop rows, and applying low volumes of insecticides under a weighted canopy with an aerosol sprayer.

New insecticides were found that control malaria-carrying

mosquitoes for an entire season with a single treatment. An effective leech repellent was provided for use by our Armed Forces in Vietnam.

### Safe Use of Pesticides

More than 60,000 pesticides are registered by the Department for consumer protection. In conjunction with the Department of Health, Education, and Welfare, we tightened restrictions in 1966 on pesticides used on food and feed crops.

> Tolerances are now being fixed for safe low levels of pesticides occurring inadvertently in some foods. When such a safe tolerance cannot be established, "zero tolerance" will be set as the basis for removing contaminated foods from the market. Pesticides are no longer being registered on a "no residue" basis, and products so registered will be removed from the market no later than December 31, 1967, unless a tolerance can be established or safety limits can be set to warrant their continued use.

An expanded ARS regulatory staff reviewed applications for new labels for all pesticide products in anticipation of the October 1, 1966, deadline when all labels had to bear strengthened warning and caution statements as well as USDA registration numbers.

Products must now be clearly labeled on the front panel "Keep out of the reach of children," plus a signal word such as "Danger," "Warning," or "Caution." Failure of more than 2,700 manufacturers of pesticides to meet the deadline requirements resulted in cancellation for registration of approximately 20,000 pesticide products.

USDA canceled some registered uses for aldrin insecticides on 25 crops and for dieldrin on 23 crops during calendar 1966 after new scientific data indicated that such uses might leave harmful residues in food or milk. ARS inspectors checked 3,763 pesticide products taken from retail shelves and found 930 violations of Federal regulations, 60 percent more than in 1965. We took legal action to seize 140 products shipped interstate in alleged violation of Federal laws.

During the year, we also made available a guide to safe use of pesticides in livestock production and completed work on a comprehensive reference guide to pesticide use for Extension Service and other workers. Sixty USDA publications were revised to update pesticide recommendations, and information on safe pesticide use was made available to the public on a sustained basis by press, radio, television, and motion pictures.

### Monitoring Pesticide Use

Through the Federal Committee on Pest Control, USDA cooperates in a government-wide effort to determine the effects of pesticides on the environment. Our Agricultural Research Service is monitoring soils at more than 50 locations—both where pesticides are used extensively and where they are not known to have been applied—as part of a comprehensive program to de-

termine levels of pesticide residues in people, fish and wildlife, food, soil, and water.

> The first year of monitoring farm use of pesticides on the Mississippi River Delta, long a heavy user of chlorinated hydrocarbon insecticides, showed no progressive build-up of residues in soil, sediment, or water. Analysis of Mississippi River silt likewise showed that pesticides applied to crops did not result in significant amounts of residue in the silt over a year's time.

All pest control conducted by the Department is planned by experienced personnel and is reviewed for safety and effectiveness by the Federal Committee on Pest Control. Our cooperative control programs are also monitored for safety by disinterested scientists. Representatives of State agencies in Texas, for example, found no injury to fish or wildlife when we sprayed 300,000 acres to control boll weevils.

### A Better, Safer Insecticide for Forest Use

Our Forest Service scientists have adapted an industry-developed chemical, Zectran, for use against spruce-budworm, a major pest attacking spruce, fir, and Douglas fir forests. Unlike DDT, Zectran breaks down rapidly in sunlight, and kills up to 98 percent of the budworm populations on which it is sprayed. Again, unlike DDT, it poses no hazard to other forms of life, since it appears to be highly selective; it kills budworms but very little else.

Studies of this chemical have led to several other research advances. Effective measurement of spray drift and density is always a problem; so tiny fluorescent particles were mixed with the spray, enabling scientists to spot droplets and measure droplet size. This showed that only a very small portion of the volume sprayed was needed to kill the insects. Plans are now underway to spray Zectran by aerosol application. This will require the use of "lidar," a combination of radar and laser developed by the Stanford Research Institute for extremely accurate measurements. We plan operational tests of Zectran next summer on 15,000 acres in the Sawtooth National Forest, Idaho.

### Port and Border Inspection

We hold down the need for pesticide use by maintaining a constant guard at our ports and borders against foreign crop and animal pests and diseases that would have to be controlled if they became established in this country.

ARS plant quarantine inspectors and cooperating Customs officials examined more than 42 million pieces of baggage during calendar 1966, nearly 6 million pieces more than in the previous year. As usual, the baggage of travelers entering or returning to the United States contained most of the prohibited materials—281,000 of the 558,000 items intercepted. Commercial cargoes, mail, and the stores of ships and airplanes provided other major sources of interceptions.

Most of the confiscated items were souvenirs, such as the coffee cherry —a bright red berry whose seed is the well-known coffee "bean." Its entry is prohibited because it may contain larvae of the Mediterranean fruit fly, a pest that could cause millions of dollars in damage to U.S. citrus crops. Some intercepted materials were deliberately concealed; for example, 40 pounds of prohibited meats discovered by our inspectors in the spare tire of an automobile brought to the United States from a European country where foot-and-mouth disease exists.

To protect against costly diseases which could be brought in through imports of animals and animal products, our quarantine inspectors in calendar 1966 checked the health status of 1,148,000 animals, seeking entry, including livestock, pets, and zoo animals. About the same number of imported animals were presented for inspection as in 1965, but the number rejected for health reasons rose from 29,000 to 53,000.

## CONSERVING AND IMPROVING AMERICA'S NATURAL RESOURCES HERITAGE

Finally we come back again to conservation. This is a key thread running through many of our USDA programs. We have seen how conservation practices add to farm income and the role conservation plays in revitalizing rural America.

But conservation is far broader than this. It affects the whole of America—the welfare of every citizen in the cities and suburbs no less than in the villages and on the farms.

We are the principal Federal guardian of most of the nation's renewable natural resources.

We administer programs embracing the conservation and development of four-fifths of the nation's total land.

We have "first" Federal responsibility with respect to the water that falls on this land.

We have extensive programs of physical and economic research covering the entire field of natural resources.

These conservation activities account for about $900 million of USDA's annual expenditures and engage about half of our personnel, or some 50,000 persons.

### More Consumers Served by National Forests in 1966

The 186-million-acre National Forest System belongs to all the people. It supplies a perpetual harvest of renewable natural resources for the whole nation—wood, water, wildlife, and outdoor recreation for ourselves and future generations.

The impact of the forests on our daily lives is easily illustrated. It takes one acre of healthy forest 20 years to grow the lumber for a 5-room house. We use, per person, about 465 pounds of paper each year. This is equivalent, per person, to the net annual wood growth from about three-fourths of an acre of commercial forest.

### Timber

The National Forests supply almost one-fourth of all the wood used by American industry for homes, paper, and other products.

Sales of timber from the National Forests annually exceed the timber sales of any lumber company in the world.

A total of 12.1 billion board feet of timber was harvested from the forests in fiscal 1966, 894 million board feet more than the previous record. Valued at $195,590,242 on the stump, this timber, by the time it has been processed and reached consumers, will generate $5 billion of income in the national economy.

During the year we made the biggest single timber sale in history—9 billion board feet of timber from the Alaskan forests —enough to build about 2 million homes. The sale will run over a 50-year period and bring $30 million to the Treasury.

### Protection Against Fires

To safeguard the National Forests, USDA operates the world's biggest fire department. It uses not only the latest conventional equipment, but bulldozers, patrol planes, chemical-carrying airtankers, helicopters, and the world-famous smokejumpers. During 1966, Forest Service crews fought 11,230 fires which burned 337,566 acres within National Forest protection areas.

Constant observation and prompt action enable our firefighters to put out potentially big conflagrations while they are still small. Research in forest fire control continues to put new, more effective tools into the hands of our firefighters. The latest such tool is an airborne infrared fire-mapping unit that enables fire bosses to see through dense smoke, spotting fire locations and measuring the rate of spread. This device, the result of 5 years' work, was successfully used on 14 major fires during the summer of 1966.

### Tree Planting

Over 850,000,000 small trees were planted on more than 1 million acres of State and privately owned lands under Forest Service cooperative programs. Forty-eight State forestry agencies cooperated with the Federal Government in producing and distributing the planting stock.

### Cash Receipts

In fiscal year 1966, National Forest resources brought to the U.S. Treasury cash receipts of $173,900,000, an increase of $27 million over 1965. Timber sales accounted for $164,900,000; the rest came from grazing fees, winter ski areas, summer homes, and other uses of National Forest lands.

Each year, 25 percent of this cash income is returned to the States for schools and roads where the National Forests are located. The States received $42,000,000 in 1966, the largest amount ever distributed.

### World's Largest Playground

No longer can the average American boy take a walk in the woods only 5 minutes from his home. The "ol' swimmin' hole" of

our tradition is likely to be forgotten unless we do something to keep it or provide a substitute for it. The wild creatures that are a part of our heritage will not survive unless we protect them.

Yet every year more and more of our people are on the move in search of outdoor fun—places to picnic, swim, hunt, fish, play, or just to relax and enjoy the fresh air and sunshine. Great as the demand for such facilities already is, we expect it to triple by the end of this century.

This growth will flow from four major factors: (1) Population, expected to reach 300 million by the year 2000; (2) disposable income, likely to quadruple; (3) leisure time, to increase by one-third; and (4) auto travel, headed for a fourfold increase over present levels.

In earlier days there was always a leisure class—with time for recreation. Today when the average person has more free hours than working hours in his lifetime we are on the threshold of becoming a leisure society—with a gargantuan appetite for recreation.

The National Forests, National Grasslands, and Wilderness Areas, located in 41 States and Puerto Rico, are America's biggest and most popular playgrounds. An ever-increasing number of visitors seek them out each year for outdoor recreation. This use in 1966 exceeded 150 million visitor days.

To serve the people who come to camp, picnic, hunt, fish, swim, ski, or to enjoy the scenery, we are adding to public facilities as rapidly as possible. Forest campgrounds and picnic areas can now accommodate nearly half a million persons at one time.

About 200 winter sports areas now provide safe capacity for 300,000 persons. Other facilities include swimming areas, boating sites, resorts, organization camps, visitor information centers, and roughly 200,000 miles of roads and trails.

### New Recreation Areas

In July 1966, the Forest Service purchased the most outstanding tract yet acquired with money from the Land and Water Conservation Fund. The American people at a cost of $5.7 million became the owners of the Sylvania Tract in the Ottawa National Forest on the upper peninsula of Michigan. Henceforth, the public will have access to a magnificent 29 square mile region of superb lakes and forests in an area long known for its outdoor recreation opportunities.

On May 31, 1966, presidential signature of Public Law 89–438 established the Mount Rogers National Recreation Area within the Jefferson National Forest, Virginia. This area encompasses 154,000 acres of outstanding mountain country, including the highest point in the State, 5,720-foot Mount Rogers. Recreation facilities will be developed to handle 3 to 5 million visitors annually.

With demand for recreation booming, Walt Disney Productions has contracted to develop the Mineral King area in the Sequoia National Forest in California. Walt Disney Productions

plans to spend $35 million to develop an Alpine Village with ski lifts, hotels, restaurants, and shops employing at least 600 permanent and up to 1,000 seasonal employees.

### Wilderness Preservation System

Besides managing the 9.1 million acres of National Forest lands that make up the National Wilderness Preservation System, we are moving quickly to complete studies and recommendations for the 5.4 million acres in 34 Primitive Areas. This "untouched" country has been protected by Forest Service policy for 40 years, and since 1964 by the Wilderness Act, to preserve a portion of our wilderness heritage for all Americans, present and future.

### Wildlife

Among the nation's valuable natural resources is the wildlife with which America has been generously endowed. American wildlife ranges from some of the world's smallest birds and animals to some of the largest. About one-third of all the big game in the nation, as well as a large proportion of smaller wildlife, is found in the nation's forests.

The preservation and protection of this valuable resource, however, must be carried on throughout the nation on private as well as public lands.

Practices designed specifically to provide feed and habitat for wildlife include planting trees or shrubs, providing permanent and annual cover, establishing ponds, and developing pits and shallow water areas.

Many practices carried out primarily as soil and water conservation measures also benefit wildlife. Over the years our Agricultural Conservation Program has assisted in the development of about 2 million ponds; and annually it cost-shares conservation practices on approximately 50 million acres, many of which provide feed and habitat for wildlife.

Since 1962 when ACP practices which are primarily for the benefit of wildlife were established as a separate category, the number of new acres on record each year devoted to such practices rose from 10,000 to more than 55,000 acres, and the number of dams and ponds from 1,100 to 3,500.

Under the Cropland Adjustment Program—authorized in 1965—the opportunity for the development and enjoyment of wildlife resources is being increased considerably.

> During fiscal 1966 about 2 million acres of cropland on 36,000 farms and ranches were diverted to protective conservation uses under 5 to 10 year agreements. Preliminary reports indicate that of this diverted land, up to about 500,000 acres on some 5,000 farms were opened free to the public for hunting, fishing, hiking, or trapping under agreements by the government to pay the farmers a small additional amount per acre to permit public access and to offer them additional cost-sharing assistance in improving wildlife resources.

The preservation of our wildlife resource and the opportunity to use it for recreation is a service to the American people as a

whole. Despite the fact that for most Americans a National Forest is within a few hours driving time, millions of our people must seek, or prefer to seek, their outdoor recreation closer to home.

Many, indeed, confine their outdoor activities to the community in which they live. The Food and Agriculture Act of 1965 gave us an additional tool through which we can help municipalities meet this need.

## AIDS TO AMERICAN COMMUNITIES

### Greenspan

Greenspan is part of the Cropland Adjustment Program. It permits us to make grants to Federal, State, and local entities to help them buy cropland for nonfarm uses such as the preservation of open spaces and natural beauty, wildlife development and recreation, and the prevention of air and water pollution.

To acquaint State and local officials with this new program, we sent letters to all 50 State Governors, executives of 750 populous counties, and the mayors of the nation's 400 largest cities inviting them to explore the opportunities available to their jurisdictions under it.

USDA officials also explained Greenspan at the annual convention of the National Association of Counties and conferred with State and local officials on the new program.

> Newark, N.Y., a city of 10,000 population between Syracuse and Rochester, was the first community to sign a Greenspan agreement with the Department. The city is receiving a Federal grant of $4,730 issued over a 10-year period to help purchase 29.8 acres of cropland in a 32-acre plot being acquired by the community. It will be converted into a recreation area with a wildlife pond, picnic area, baseball and softball diamonds, badminton courts, ice skating rink, and other facilities. besides the purchase grant, cost-share assistance of about $2,900 will be provided to help establish the conservation measures the land will need in its new use.

These grants are comparable to the assistance given to farmers under the Cropland Adjustment Program. Although Greenspan involves an actual purchase of land by a State or local government, the Federal payment is figured at the same rate as if the farmer had retained ownership of the land and retired it under the Cropland Adjustment Program for a 10-year period. Rates are based on the kind and value of crops that have been grown and on the productivity of the land. The total land-purchase grant may not exceed 50 percent of the cost of the cropland bought.

Despite the limited period of about 6 weeks for applications for Greenspan late in fiscal 1966, 15 agreements were signed with local governments in 8 States. A number of other communities had projects in the planning stage. As Greenspan continues in the future, local governments will have more time in which to develop local interest, to find and arrange for land, and to provide the local funds.

We provide a growing amount of technical, planning, and con-

sultative assistance to towns and cities. Soil surveys, for example, are increasingly demanded not only by farmers and rural communities but by cities and metropolitan areas.

### Soil Surveys

For the country as a whole, the benefits resulting from these surveys generally bring at least $2 of return the first year for each dollar spent in the entire cost of making the survey. The average published survey is useful for at least 25 years.

In areas of high intensity land use, such as rapidly growing metropolitan areas, cost savings resulting from using published surveys over a 25 year period average $123 for each $1 of survey cost.

> Cohasset, Mass., saved more than $250,000 on its sewage system by using information from the soil survey, which showed that less than 1 percent of the town area was suitable for onsite sewage disposal.

Sometimes the picture is reversed and a city or town finds out, too late, that the soil survey it did *not* have could have saved taxpayers large expenditures.

> A community near Detroit, Mich., is out $200,000 because its new water main was constructed across a 600-foot-wide area of deep peat. A soil survey could have indicated another route over normal mineral soils.

Fairfax County, Va., lost $250,000 in avoidable costs when it selected a school site without the guidance of a soil survey. When the survey became available, it showed that another site only 500 feet away had favorable soils.

### Land-Use Planning

Our Soil Conservation Service assists local land-use planning bodies in municipalities and counties, especially in areas of rapid urban expansion, and it aids groups concerned with regional resource planning.

In fiscal 1966, SCS performed 112,337 consultative services for such groups and for individual land developers, 19 percent more than in the previous year. In so doing, we provided basic data on more than 21 million acres, a 6-fold-plus increase over 1965.

> Cato Township in Cayuga County, N.Y., is gradually becoming an outer suburb of the city of Syracuse. Its present population of 1,800 is expected to double by 1975.
>
> In 1964 the Cato Town Planning Commission, seeking planning aid from the Cayuga County Soil and Water Conservation District, learned that a complete soil survey of Cato Township was available.
>
> The planning commission bought copies of the survey sheets and SCS conservationists helped the commission develop three large maps showing suitability of soils for agriculture, homesites, roads, and septic tank fields.
>
> After many public meetings, a master land-use plan was completed and the local governing body adopted the plan for Cato as a guide to orderly growth during the next decade.

### Reducing Sedimentation

Each year a billion and a half cubic yards of sediment are deposited in our major reservoirs, reducing the nation's water supply capacity by the amount of water needed for a city of 5½ million persons for a year.

Our river beds and harbors also are silting in. The Rio Grande River, for example, is rising an inch a year, which means the channel will hold less water and flood more frequently. The harbor of Cleveland, Ohio, has to be dredged every year; each time, about 880,000 cubic yards of sediment are removed at a cost of more than 56 cents per cubic yard.

To find ways of dealing with this growing problem, USDA researchers study soil erosion and how sediment is transported and distributed in stream channels, lakes, and reservoirs. Recently, for example, they developed a new instrument for measuring sediment load in streams and rivers to help determine sediment sources and movement.

## USDA'S "WAR ON WASTE"

One final way in which we serve all the people is by striving to the best of our cooperative ability to make sure that every USDA dollar is spent with thrift and common sense and a realization of how hard the taxpayer worked to earn it.

As our part in the "war on waste" we set a dollar savings goal for 1966 of $364.5 million. Actual savings totaled $434.8 million.

This result was achieved in two ways. First, we cut down on spending through concerted management and employee efforts on many fronts. Second, we "stretched" available budget dollars by getting increased value for money spent, greater output of services through increases in productivity, and by eliminating marginal activities.

Using a newly developed system, a top level review of agency cost reduction goals was made by the Department's Program and Budget Review Committee under the chairmanship of the Under Secretary of Agriculture. Proposed goals were then submitted to me for final approval and in turn submitted through the Bureau of the Budget to the President.

Under a new reporting system, each agency's savings progress against a predetermined goal is compiled twice a year —in February for the first half of the fiscal year and in August for the last half.

### Recognition—An Important Ingredient

We initiated a new Special Merit Award Program for Outstanding Cost Reduction Achievement in January 1966. The purpose of this new program is to recognize employees or groups who have made an outstanding contribution to the "war on waste." A special certificate was designed for employee awards, in addition to any monetary or other recognition.

The first awards were presented by the President to 37 employees at a ceremony on April 5, 1966.

### Some Examples

What we have done in the past year is best shown by a few examples. Each illustrates a type of "belt tightening" or "dollar stretching."

*Seeking Program Alternatives.* Farmers Home Administration converted from direct to Federally insured private loans for rural housing. Net savings to the Federal budget totaled over $205 million in fiscal 1966.

*Increasing Productivity.* The Soil Conservation Service achieved cost reductions of almost $10 million in fiscal 1966. A sizeable portion of the savings resulted from employees producing more units of work and from improved procedures and organization.

Substantial productivity increases were also registered by other agencies and offices, including the Agricultural Stabilization and Conservation Service, the Consumer and Marketing Service, and the Office of Management Services.

*Self-Surveys.* A new system, developed by an inter-agency task force, to improve USDA mail and messenger service will save about $100,000 annually. Only 19 mail rooms will be used instead of 55 under the old system, thus freeing scarce office space. The 19 mail rooms will also be more conveniently located.

A joint survey conducted in the Forest Service by USDA, the Bureau of the Budget, and Civil Service will produce both immediate and long-range economies as well as better management. Among the first results stemming from this joint survey is the closing of two regional offices with savings of $786,000 in annual recurrent costs and $579,000 in non-recurrent expenses.

### A Look Ahead

We will not rest on these accomplishments. The "war on waste" is continuing. While fully carrying out all our USDA responsibilities, we will make sure that no cost is incurred that can reasonably be avoided. This is an objective of the whole Department and of every employee in it.

# EPILOG

We are now seven years into the seventh decade of the twentieth century, poised at a point in time when fundamental, widespread, and irreversible changes in the fabric of the United States are occurring daily.

Less than half a lifetime ahead of us lies the dawn of a new century. And if that date has the ring of the far-distant future, it might be well to recall just how near it really is.

Today we are equidistant in time from the beginning of that new century and the beginning of the New Deal. Less than half a lifetime ago, America—including rural America—was facing an internal crisis. It was a highly visible crisis, affecting the total population. A *clear* and *immediate* threat to the economic structure and welfare of the nation posed a challenge to the whole of American society.

The nation responded to that challenge. It created agencies and programs to put the jobless to work, to get business back on its feet, to save our banks and restore confidence in them, to help labor organize, to establish social security, to protect homeowners.

It created agencies and programs to conserve the soil, to extend electricity into the countryside, to bring agricultural supply and demand into balance, and to bolster farm prices and income.

What the people of America did in those years fundamentally altered the conditions of our lives today. We look back on what they did, and we find it good.

Today we face another crisis—another challenge—not one iota less serious or less fundamental than that of the 'thirties. But there is this difference: today's crisis is less apparent. Because it is not so clear a threat to our jobs, our savings, our finances, it seems less immediate. And so it tends to be overshadowed by more spectacular problems and events at home and abroad.

Yet, if we fail to recognize that we are in crisis—and consequently fail to face up to the existing challenge—the results could be no less disastrous than if that earlier generation of Americans had failed to meet their challenge of the 'thirties. The year 1933 was part of an era of great problems. But we see it now as the beginning of an era of great progress.

When our children and grandchildren look back from the Year 2000, what will they see? Will they see this present year as one of crisis and of challenge—but also as the beginning of an Era of Great Fulfillment?

This is what our generation must determine.

Ours is an age of collapsed time. We see more technological and scientific progress in a year—perhaps in a month—than our ancestors saw in a century.

Ours is an age of exploding knowledge. The world total of new books and monographs in science and technology more than doubled between 1950 and 1965.

Ours is an age of speedy application of research and technology. Not many years ago we hailed it as a fantastic achievement —and it was—when hybrid corn was put into use all over the United States in roughly a decade. Today, we would consider this slow motion.

The challenge of our generation is to turn the scientific, technological, and information explosions to the advantage of the human race.

And we in agriculture are particularly challenged—because if America is to succeed in this adventure, agriculture can, must, and, I believe, will provide many of the most basic tools. Fortunately, the continuing progress of the year 1966 gives promise that agriculture can and will meet its Challenge—Today and Tomorrow.